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COMMITTEE FOR ECONOMIC DEVELOPMENT
RESEARCH STUDY

Monetary Management

By E. A. GOLDENWEISER

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PRINCETON, NEW JERSEY

Money will not manage itself.—WALTER BAGEHOT

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MONETARY MANAGEMENT

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The Trustees of the Committee for Economic Development established the Research and Policy Committee "to initiate studies into the principles of business policy and of public policy which will foster the full contribution by industry and commerce to the attainment and maintenance of high and secure standards of living for people in all walks of life through maximum employment and high productivity in the domestic economy." (From CED By-Laws.)

The studies are assigned by the Research Director to qualified scholars, drawn largely from leading universities. Under the by-laws "all research is to be thoroughly objective in character, and the approach in each instance is to be from the standpoint of the general welfare and not from that of any special political or economic group."

The reports present the findings of the authors, who have complete freedom to express their own conclusions. They do not purport to set forth the views of the Trustees, the Research and Policy Committee, the Research Advisory Board, the Research Staff, or businessmen affiliated with the CED. This report on monetary management is the fifteenth study in the CED series.

The Research and Policy Committee draws on these studies and other available information in formulating its recommendations as to national policy for the problems examined. Its policy statements are offered as an aid to clearer understanding of steps to be taken to reach and maintain a high level of productive employment and a steadily rising standard of living. The statements are available from the national CED headquarters.

TO THE ECONOMIC STAFF
OF THE
FEDERAL RESERVE SYSTEM

FOREWORD

IN THE 1920's and earlier, the prevailing view of economists was that monetary, or banking, policy was the key and possibly the sufficient instrument for economic stabilization. In the 1930's, monetary policy was demoted to a position of very subordinate rank. Recently, the pendulum has begun to swing back again.

It is important to get a balanced appraisal of the potentialities and limitations of monetary policy not only in the light of theoretical considerations but also in the light of the American institutional environment. The possibilities for contributing to economic stability through monetary policy are crucial for deciding how far it may be necessary to go in other directions. Mr. Goldenweiser, by virtue of his long experience as Director of Research and Statistics for the Board of Governors of the Federal Reserve System, is unusually qualified to make such an appraisal.

This small book deals particularly with experience in the United States in the past thirty-five years. It is predecessor to a larger volume which will discuss more extensively the problems and potentials of monetary action.

The CED research program of which this report is a part is described in a note on pages 155 to 162.

THEODORE O. YNTEMA
Research Director

P R E F A C E

THIS STUDY attempts to present in brief form the essential elements of monetary management in the United States from 1914 to 1948. It indicates the role played by money in the economy and the powers of monetary authorities in regulating the volume, availability, and cost of money. It reviews briefly the experience of American monetary management since the establishment of the Federal Reserve System in 1913 and outlines the problems that confront it at the present time. It also presents the author's views on how these problems could be handled. It has been the writer's purpose to make the text understandable to nontechnical readers who are interested in the subject of money.

The study is written with the assumption that the readers are familiar in a general way with the mechanics of Federal Reserve operations. For the benefit of those who do not have this familiarity or wish to refresh their memories, there are reprinted in the Appendix Chapters II, III, IV, VI, and VII of an official booklet on "The Federal Reserve System: Its Purposes and Functions," prepared in 1946 by the writer of the present study in cooperation with Bray Hammond and other members of the staff of the Board of Governors of the Federal Reserve System.

A word of explanation. If in the course of the discussion there is at times criticism of actions by the monetary authorities, it is offered humbly with full recognition of the difficulty, often the impossibility, of knowing currently what becomes apparent in retrospect. It is presented also with awareness of the complexity of the machinery by which decisions are made and

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of the forces that play thereon. The writer is conscious also of the fallibility of his own judgment even of past events. If he nevertheless has the hardihood to present his views, it is in the hope that free discussion of the controversial subject of monetary management may contribute to the development of informed public opinion and to willingness to accept and cooperate with policy decisions even though they be at times unwelcome to individuals and groups.

Thanks are due to the Board of Governors of the Federal Reserve System for permission to reprint the chapters that appear in the appendix, for a statistical check of figures used, but without commitment as to interpretation, and for preparation of the charts.

E. A. GOLDENWEISER

PRINCETON, N.J.
March, 1949

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INTRODUCTION

MATERIAL on which a study of monetary and banking policies must be based consists of records of discussions and decisions and of economic and financial statistics. These reflect conditions that led to the decisions as well as developments which followed and may have been influenced by them. The basis of monetary decisions and the test of the effectiveness of monetary policies are by necessity largely statistical. Consequently, appraisals of monetary policy are subject to the same limitations as the statistical material on which the decisions were based.

There are a great many series of figures which are reviewed by policy makers, all essentially estimates and none entirely comprehensive. Their conclusiveness, therefore, depends almost entirely on whether the figures, not being comprehensive, are nevertheless representative, and whether all the essential elements that shape a decision or its consequences are reflected in the statistics. The great bane of an interpreter's life is the missing fact which often constitutes the missing link between his interpretation and reality. Constant efforts are being made to make the figures more comprehensive, more many-sided, and more realistic. But frequently there is some fact in the situation which eludes the statistician and it may be the determining factor, modifying or reversing the conclusions reached on the basis of existing statistical series.

Statistics, furthermore, are necessarily expressed in totals and subtotals, while the course of human events is shaped by many millions of individual decisions which often exhibit reluctance to fit into statistical categories. The more comprehensive the

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totals, the more violence they may do to reality. Grand totals for the economy as a whole, indispensable as they are, carry hazards of forced regimentation of material and consequent unrealistic interpretation of the facts. It may even be said that totals used without adequate appreciation of their limitations have in them the seed of totalitarianism. And yet totals and subtotals, in their proper setting and used with adequate caution, are indispensable tools for the formulation of rational economic policies in any community, controlled or free.

Proposals based on a facile interpretation of aggregate figures are likely to suggest measures that would influence the totals by operating on component parts on the supposition that the parts all have similar characteristics. Somewhat paradoxically, conclusions based on impersonal aggregates may lead to policies that interfere unnecessarily with the freedom of personal decisions and preferences. The most obvious way to assure a stable aggregate price level, for example, is to prevent changes in individual prices, that is, to institute price control. The most direct way to regulate total savings and investments is by controlling individual saving and investment. The simplest way to create a desired government deficit or surplus is by seeing to it that total revenue, no matter from what source, falls short of or exceeds expenditures, for whatever purpose, by a determined amount. The net result is a tendency toward an ever-increasing degree of centralized action, a tendency which reaches full fruition in a totalitarian state.

In a preface to a German edition of *General Theory*, Keynes indicated that his analysis, based as it is largely on totals, would be more applicable and more pertinent in a totalitarian state than in one in which private enterprise has greater scope. A democratic approach to public problems must stress the fact

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that economic totals are only aggregates of millions of parts which may differ from each other in more respects than they parallel each other. Mistakes made by individuals may offset each other but mistakes based on totals are likely to be aggregative and may be disastrous. It has been said about Nazi Germany that it was so well organized that it could only make major blunders. Unfortunately this danger is not confined to totalitarian states.

To guard against the danger lurking in totals, we must attempt to subdivide them in such a way as to isolate, in so far as it is practicable, such facts as have common characteristics and to be always alert to the missing fact or trend. Attempts to keep in mind each unit of a large group would lead to complete frustration and inaction, but a constant awareness that totals are only indicators of measurable trends rather than absolute reflectors of all the main factors at play is an important safeguard against unduly mechanistic interpretations of social phenomena and oversimplified solutions of social and economic problems.

These limitations on the character of material on which social and economic policy decisions must be based are among the hazards on the road to effective monetary management. Full appreciation of the formidable nature of these hazards is a necessary prerequisite for a fair appraisal of past monetary events as well as for wise decisions on current monetary policy.

What a total may conceal is illustrated by the vastly different economic significance of a given amount of money—depending on what groups hold it, in what proportions and for what purposes. The relatively large amount and availability of money in relation to national income in the early thirties, when money was held idle because of lack of confidence, had entirely different implications from those of the large amount of money in 1948 after the changes that had occurred in

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income distribution and in view of the short supply of many goods.

Action in the monetary field is unavoidable even though it may take the form of no interference with events. This action must be based on indicators, however imperfect, in the possession of the policy makers. This alleviates the responsibility for mistakes of judgment which may be made by monetary authorities. The missing fact may emerge only when the event is long past. At such a time the interpreter and critic is likely not to realize that when the decision was made, these facts, if not buried in totals, may have been rendered invisible by preconceptions without which the human mind cannot function.

This study deals almost exclusively with the monetary aspect of economic policy. Fiscal and monetary policy are complementary phases of public administration. Fiscal policy may create income—but by itself cannot create money nor determine its availability and cost. Monetary policy can create money and determine its availability and cost—but cannot of itself create income. For studies of the regulation of income the reader will have to look elsewhere. The discussion here will be of the art of monetary management: the regulation of the volume, availability, and cost of money.

I. ROLE OF MONEY IN THE ECONOMY

MONEY OCCUPIES a strategic spot in the economy. Nearly all economic activity is channeled through money payments. In spiritual welfare the proper volume and distribution of money may be a secondary factor or no factor at all, but in shaping economic well-being it is a powerful force. In a well-functioning modern economy, there has to be a sufficient amount of buying power, that is, money in its broadest sense, so distributed as to make possible the taking off the markets of all goods currently produced. To do this there has to be an adequate supply of money as well as an adequate use of this supply. The distribution of the monetary flow or income has to be such as to place in the hands of consumers sufficient means to purchase the output of consumers' industries and in the hands of investors funds adequate to maintain the existing productive plant and to expand it sufficiently to meet the consumption requirements of a growing population with a rising standard of living. To assure such a flow of money is the broad objective of monetary policy.

Whether this ideal can be achieved with little change in the volume of money by an expansion in its efficiency, or velocity, is a controversial question. Some interpreters tend to attach exaggerated significance to the volume of money as such. In this wise, they have asserted, contrary to the record, that monetary velocity changes but little. There are others who have been discouraged by the obvious fact that at times the economy fares badly even though the money supply is more than adequate and that prosperity may be achieved without a change in the amount of money. Monetary skeptics are prone to say that

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money will take care of itself, provided other elements in the economy are properly managed. Monetary enthusiasts are likely to exaggerate the economic potency of the money supply.

After the 1929 crash, when the money supply had contracted radically concurrent with the development of a deep depression, many thought that if we would only increase the supply of money, the economy would recover. The money supply increased rapidly after 1933, but this did not bring recovery. Disillusioned by this experience, many believers in the importance of the supply of money abandoned their belief and turned for remedies first to government spending and later to government controls.

It is apparent that money by itself is neither the root of all evil nor the source of all good. It can and frequently does contribute to both. The money supply and the income stream and its distribution are among the major factors shaping the economic functioning of society. An understanding of this major force, of its causation and consequences, is worthy of the endeavors expected of those responsible for monetary management. Walter Bagehot said, "Money will not manage itself."¹ If there must be management, there is need for machinery and operators who will manage it adequately and effectively.

How divergent views can be on the subject of money is illustrated by the situation prevailing in the summer of 1948. There was at the time an unprecedentedly large supply of money, a great domestic and foreign demand for goods and services, a short supply of many of these, and a rising level of prices. On their face these were perfect symptoms of inflation. Yet there was controversy. Some said that prices would not rise if only wages were kept down. In this state-

¹ Walter Bagehot, *Lombard Street*, John Murray, London, 1873, p. 20.

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ment they overlooked the fact that labor had been successful in obtaining higher wages only because employers knew that in the existing sellers' market they could pass the increased costs to the consumer. Others said that prices were high because corporations insisted on high profits. They overlooked that, in many instances, the apparent profits were merely bookkeeping profits and that, broadly speaking, the function of business executives is to seek as high profits as can be obtained, in many cases over the short run, in some cases over the long run; this is the basis of operation of the system of free enterprise and the profit motive. What was ignored was that the reason corporations could charge high prices and make large profits was that the public had the means and the desire to buy the goods, even at high prices. Some ascribed the entire situation to over-abundance of money and other liquid assets—the heritage of war finance. There is truth in all these statements. If wages were not increased, the inflationary spiral would be restrained, not so much because costs would be lower as because workers would have less money with which to bid for goods. If corporations were not willing or not able to raise prices, they would have less money to bid up capital goods and to pass on to the stockholders in dividends. If the money supply were reduced, this also would tend to reduce demand for goods and would remove a cause of upward pressure on prices. The causal relationship in all these economic phenomena runs in both directions. They are all causes and all consequences. The problem is at what point the circle can be broken. And this is where the importance of money becomes apparent. None of the other factors—wages, profits, prices—are readily susceptible of management in a free economy, because they are affected by numerous decisions of individual participants in the economic whole. But the supply and availability of money, which

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enters into all the other relationships, is susceptible to regulation in a way that is both impersonal and pervasive.

. In certain respects money, one of the most concrete of economic entities, is nothing but a state of mind. It means something entirely different to different people, depending on their state of mind. To the miser it is an end in itself. To the spendthrift it is a means of enjoying the process of spending, and to the thrifty, industrious citizen it is a means of obtaining the necessities of life and of providing for emergencies and old age. The same amount of money represents plenty for some and penury for others, peace of mind for one group and worry for others. Nor is this entirely a matter of living standards. It differs in its significance for persons with roughly identical standards and economic responsibilities. There are people who always have enough money and some to spare, almost independently of the size of their income, provided it is not below an irreducible minimum necessary for the maintenance of decent standards. There are others who are always short of money regardless of the size of their income. The difference between the two is not entirely in the magnitude of their wants nor in the degree of their competitive vanity or of appreciation of finer and more costly things. It is in the whole gamut of almost imperceptible minutiae, in habits about gratuities, in preferences about diet, in responsiveness to others' needs, in sensitiveness about criticism, in aptitude for arithmetic, in willingness to take pains, in relative appraisals of the cost of effort, in relative knack for knowing the ropes, in relative degrees of affection for money itself—in a word, in differences more closely associated with the mind than with the pocketbook.

. In discussing the economic role of money, the cardinal fact that the forces which affect its functions are not all concrete or

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easily definable, but are to a considerable degree intangible and psychological, needs to be recognized. It is a negation of the economic man and a recognition of men with different natures, habits, and states of mind. It is a caution signal for the rash generalizer.

DEFINITION OF MONEY

It would seem that a clear-cut definition of money should not be difficult. Money is any generally acceptable means of payment. Whatever is received without hesitation by persons who sell goods or services in payment for their wares and by creditors in payment of debt is money. No one would question that legal coins and bank notes, silver certificates, and United States notes are money. Deposits payable on demand are also generally recognized as money, even though acceptance of each individual check is much more restricted. No one is obliged to accept a check. However, since the bulk of payments in this country is made by check, the exclusion of deposits from the definition of money would make the term practically meaningless. The definition of money is of more than academic or professional consequence. It determines what is counted when the supply of, and the velocity in the use of, money is under consideration. Beyond currency and demand deposits, there is a whole series of obligations which may or may not be counted as money. Ruling out short-term securities, which are not generally recognized as money, there are time deposits, which are usually withdrawable on demand, even though the banks have authority to require thirty days' notice.

From an administrative point of view, a sharp distinction between demand deposits and time deposits is undesirable because it encourages the development of devices that place on

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the administrative machinery too heavy a burden to permit effective enforcement of the distinction.¹ Fortunately, the record is that indications for monetary policy based on changes in the supply of money are usually the same, whether the money supply be measured by demand deposits or total deposits. Movements of demand deposits are larger and more rapid but, while inclusion of time deposits moderates the rate of movements, the direction of change in total deposits rarely differs from that based on demand deposits alone. For monetary policy, therefore, it is not a matter of importance which definition is adopted.

In this study, when money is referred to, the figure used will include currency outside of banks and demand and time deposits. A practical reason for adopting this terminology is that total deposits correspond to total loans and investments on the asset side—which may be referred to as bank credit. There is no way of telling at the time a loan or an investment is made by a bank what proportion of the proceeds will appear as demand deposits, what proportion as time deposits, and what proportion will be withdrawn as currency. The aggregate of the three corresponds roughly to total earning assets of the banks. From the banks' viewpoint deposits are a passive item, the banks receive them and pay them out at the customers' discretion. Loans and investments, on the other hand, are the active or dynamic side of the banks' operations; the banks may make loans or investments or refuse to make them, at their own discretion. Consequently, credit or monetary policy, which is intended to influence bank operations, must address itself largely to exerting an influence on the lending and investing operations of the banks. Through

¹ The 100 per cent reserve proposal, for example, would require 100 per cent reserves against demand deposits only. The incentive for using as means of payment instruments other than demand deposits could be so great as to circumvent the objectives of the plan.

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these operations the banks express their own credit policy. The counterpart to this figure on the liability side is deposits, including both demand and time, plus currency in the public's hands.

VOLUME, AVAILABILITY, AND COST OF MONEY

There are three separate aspects of money that affect the economy. These phases are the volume, availability, and cost of money. The volume of money means the amount of notes and coin and bank deposits held by the public; the availability of money means the willingness and ability of banks to create additional money (credit); and the cost of money is measured by the rate of interest.

As already indicated, the importance of the volume of money is different at different phases of the cycle. Possession of money does not in itself assure its active use. When the business outlook is dark or when there is a lack of confidence in the future, a vast accumulation of money may lie idle in hoards or on deposit. The early thirties was such a period. The volume of money had been replenished after the rapid decline in 1930 to 1932, but there was hesitancy about taking money out of hoards and particularly about embarking on business undertakings. The existence of an adequate volume of money, therefore, is no assurance of active business nor necessarily an indication of it. It does, however, provide the necessary means for the resumption of activity and establishes a climate favorable to business recovery. Similarly, overabundance of money does not make an excessive use of money in relation to the supply of goods—that is, inflation—inevitable. But it does provide the basis for it and, as a matter of record, is generally followed by it.

From the point of view of business decisions, availability of money is more important than its existing volume. To func-

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tion actively, a business firm needs the assurance that it can obtain additional money if it should require it. Some firms have sufficient cash for all their possible needs. But there are always numerous individuals and corporations which, under our system, do business largely on credit. The lines of credit at the banks and the ability to obtain additional money if required are more potent factors in business decisions than is the more or less fortuitous fact of how much actual cash or deposits an organization may possess. It is perhaps through their influence on the availability of money that the monetary authorities exert the most direct and most powerful influence on economic activity.

If the banks have reserves in excess of legal requirements or have confidence that they can obtain such additional reserves without difficulty, they are more willing to make loans and investments and thus to create additional money. The amount of reserves held by banks is subject to regulation by the monetary authorities. The law prescribes certain reserves that banks must hold against deposits and under existing law the Federal Reserve Board has authority to modify these requirements. By prescribing that the banks shall hold on deposit with the Federal Reserve Banks a larger or a smaller proportion of their demand and time deposits, the Federal Reserve Board can influence the availability of a given volume of reserves for the purpose of credit extension. As is well known, the law prescribes that member banks must hold on deposit with the Federal Reserve banks a minimum of 3 per cent of their time deposits, and of 7, 10, and 13 per cent of their demand deposits, depending on whether the bank is located in what is loosely known as the "country" or in reserve cities or central reserve cities. The law provides that the Federal Reserve authorities can increase these requirements up to double the minimum ratio prescribed. In June, 1948, the

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requirements were practically at the maximum authorized by law. The slight margin of requirements not yet utilized was on central reserve cities, which had to keep 24 per cent of reserve against their demand deposits, the possible maximum being 26 per cent. During the special session of the Eightieth Congress in the summer of 1948 the Federal Reserve was given authority to raise reserve requirements on demand deposits by an additional 4 percentage points and on time deposits by a further $1\frac{1}{2}$ points. Effective in September, 1948, requirements were raised by 2 points on demand deposits and $1\frac{1}{2}$ points on time deposits.

That an increase in reserve requirements is a potent method of reducing availability of credit is clear from the fact that at the minimum rate, member banks would only have to hold about \$9 billion of reserves against their existing volume of deposits, whereas at the maximum they must hold \$21 billion. By administrative action, therefore, the Federal Reserve authorities can increase or decrease the basis for credit extension by \$12 billion. If it is remembered that the banks can extend credit up to many times the required reserves, this indicates the power of the System to provide for the banks or to deprive them of the basis for several scores of billions of dollars of credit extension, or the creation of money.

Changes in reserve requirements, furthermore, affect the ratio by which the banking system can expand in relation to its reserves. If average reserves, counting reserves on all types of deposits, are fixed at 10 per cent, then every dollar of additional reserve money can support \$10 of additional credit. If they are fixed at 20 per cent, then each reserve dollar can support only \$5 of additional credit. It is apparent that this is a powerful weapon of credit administration. With the large inflow of gold, the volume of reserves at the disposal of the banks has been so large that the authorities were led to

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use their power of immobilizing reserves practically to the permissible maximum. After the increase put into effect in the autumn of 1948 there was unused authority to immobilize additional reserves to the extent of about \$2½ billion.

While powerful, this method of reducing the availability of money is not well adapted to frequent use in response to current changes in business conditions. The ratio is expressed in percentages and requires constant vigilance by the banks to see to it that the average reserves over the reserve computation period are adequate to meet the requirements. In case they are not adequate, a bank is subject to penalties and also to criticism and discipline by the authorities. This makes use of the power over reserve requirements somewhat difficult except at times when excess reserves are so plentiful that banks can meet an increase in requirements without the necessity for abrupt adjustment. The difficulty arises in part from the fact that there are more than 6,000 member banks. Even when excess reserves are relatively abundant in the aggregate, some banks will have lent and invested to the limit of their capacity, and find themselves, if requirements are raised, confronted with a deficiency of reserves produced suddenly by administrative action. Another difficulty is that Federal Reserve requirements apply only to member banks, so that increases in requirements result in discrimination against these banks as compared with those that are not members of the Federal Reserve System.

Plans are under way to improve the system of reserves, which was inherited from the national banking system that preceded the establishment of the Federal Reserve Banks. One way in which changes in reserve requirements could be utilized more effectively would be a provision in the law permitting the rise in reserve requirements to be applicable to deposits created after a given date. If that were in effect,

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raising requirements would not produce a deficiency in any bank which had sufficient reserves at the time the action was taken, but would restrain further expansion. This method has been used in Australia and the authorities have found it workable. True, it is easier to handle the matter in this way when there are only a few banks, as is the case in every country in the world other than the United States. With 6,000 member banks and 9,000 nonmember banks, the matter is more complicated. It is probable, however, that this approach would not encounter insurmountable administrative difficulties.

It has been indicated how powerful a change in reserve requirements can be, since it diminishes or expands the credit base on which a multiple credit structure can be erected. Patently, banks would not suddenly expand or contract their credit to the full limitation of the law. Expansion depends upon the banks' judgment as to the character of loans and investments available to them. An increase in their free reserves will result in a commensurate credit expansion only when there are adequate demands for credit from credit-worthy potential borrowers. On the other hand, contraction of credit at the ratio of six to one or ten to one, to accord with an increase in reserve requirements, would never happen because banks would not be willing to reduce their loans in so radical a manner. If they did, there would be a liquidation of a magnitude that the economy could hardly tolerate.

When a bank's reserves are below the required level it can borrow from the Federal Reserve Banks such part of the increase in reserve requirements as it is not able or willing to meet by liquidation. This does not prevent an increase in requirements from being a powerful instrument of contraction, since banks do not like to show indebtedness, and continuous indebtedness is discouraged by Federal Reserve authorities. In recent years there has been very little bor-

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rowing from the Federal Reserve Banks. This is by reason of the fact that the member banks have an enormous portfolio of government securities and can adjust their reserve position by sale of such securities to the Federal Reserve Banks. So long as the Federal Reserve Banks stand ready to buy government securities when offered to them, adjustment to changes in reserve position present little difficulty. This situation arises from the wartime commitment of the Federal Reserve to support the government security market. So long as this commitment remains in effect, the initiative in loosening or tightening credit conditions is not in the hands of the Federal Reserve but in the hands of member banks, or the market.

Another method by which the Federal Reserve can increase or decrease reserves available to member banks is through the purchase or sale of government securities in the open market. The importance of open-market operations arises from the fact that when a bank sells a government security to a reserve bank, this creates no indebtedness and the bank is under no pressure to contract its credit to customers. (To refresh the reader's mind on the way this method operates, description from an official source is included in the appendix on pages 119 to 124.

It is at this point that the question of the conflicting responsibilities of the Federal Reserve System, arising out of war financing, becomes apparent. The System has a definite responsibility for preventing credit expansion at a time when the money supply is redundant and the general business situation is indicative of inflationary pressures. It has, however, carried over from the war a sense of responsibility for maintaining an orderly market in government securities, and has in recent years joined the Treasury in assuring the public that in the foreseeable future long-term government bonds will

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not be permitted to fall below par.¹ This problem will be discussed in more detail later in this study but it should be indicated at this point that complete adherence to the commitment for supporting government securities at par is not consistent with a determination to prevent excessive credit expansion.

* To summarize, therefore, Federal Reserve authorities can influence the availability of credit through changes in legal reserve requirements when this is permitted by law and by changing the amount of reserves at the disposal of the banks through discount and open-market policy.

A more complex question is regulation of the cost of money, that is, the interest rate. It almost never happens that money is not available at any cost. What happens when money conditions become tight is that the interest rate rises, the acquisition of additional money through borrowing from banks or in the market thus becoming more expensive. In conventional economics the theory is that when the interest rate rises it discourages enterprise to the point where demand for credit diminishes and the inflationary trend is checked or reversed. This sequence of events has been questioned, particularly in recent years. Experienced businessmen have said that they are not aware of any occasion when a higher interest rate has influenced a business decision. It is true that complete dependence on an automatic and prompt response by borrowers to a rise in the interest rate is not realistic. There are many enterprises in which interest on borrowed money is a relatively minor proportion of costs. In such undertakings the prospect for a profitable market for the goods produced is vastly more important in determining the volume of operations than is the cost of money. An automobile factory, for

¹ The lay reader should be aware that the Government bonds discussed here are always the marketable (or negotiable) bonds; savings bonds are not in this category.

example, is not likely to reduce its operations or to refrain from expanding them because it has to pay $\frac{1}{2}$ per cent or 1 per cent more for money that it may have to borrow at the banks. The cost of labor and materials is so much larger an element in the total cost that the influence of the interest rate may be considered as almost negligible.

. To draw from this circumstance the conclusion, however, that the interest rate is entirely ineffective in influencing business activity is not justifiable. There are a great many lines of activity in which the interest rate is important. For example, in housing paid for in large part by loans to be amortized over a period of years, the rate of interest makes a great difference in the monthly payments and in the aggregate cost of a housing unit. This is true also of such undertakings as the construction of a bridge paid for by a bond issue. All the actual construction cost may be raised by borrowing from the public, and the rate of interest paid on the bonds will have a considerable effect on the cost of the bridge to taxpayers, if it is a free bridge, or to the users of the bridge if it is made a toll bridge. The interest rate is also a serious consideration in the building up of inventories. Inventories of stores and other enterprises in many cases are carried on credit, and the interest rate is a significant cost in carrying the inventory. It is often asserted that a speculator in commodities or in securities will not stop to think of the cost of borrowing, measured in percentages per year, when his eye is glued to quotations which may change by many per cent in a day. This is true, but even there when the speculator receives his statement from the broker, he often finds that after all his gains and losses have been canceled out there is one persistent cost, namely, the interest on the borrowed money. In some respects it is like the percentage in favor of the house in a roulette game. In roulette, the house has 1 chance in 37 in its favor;

on that one chance the casino in Monte Carlo earns in the course of a year enormous dividends, sufficient to relieve the inhabitants of Monaco of all taxes, to support the biological researches of its prince, and to give vast profits to its proprietors. For all this the roulette players pay through the 1 chance out of 37 against them.

Another way in which interest rates are important is through their influence on the timing of corporate financing. In deciding when to undertake plant expansion, many corporations take into consideration whether the market for securities is propitious, which in most cases means whether they can sell their obligations at a fairly low rate. Probably they wouldn't give up their undertaking indefinitely because of the rate of interest on bonds, but it is certain that before issuing their securities they would wait for what would look to them as a favorable market.

Perhaps the field in which the influence of the interest rate is most discernible is in the changes in the portfolios of banks and investment institutions. These institutions have sharp pencils and operate close to the market. The timing and character of their investments is powerfully influenced by prevailing rates of interest. To them the difference of $\frac{1}{4}$ or $\frac{1}{8}$ per cent may make the difference between investing or not investing in a certain security. It may be partly habit of mind, but there is sound business reason back of it. These institutions operate with funds which are a great many times larger than their invested capital. A change of $\frac{1}{8}$ per cent on the average investment may make a difference of more than 1 per cent in the return on their capital. The difference may determine their choice of investment as between short-term and long-term government securities, as between government securities and other securities, and as between securities and mortgages and other forms of loans.

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* It is unrealistic, therefore, to disregard the influence of the cost of money in the general operation of the economy. It is a powerful influence, even though at times it may be difficult to trace the channels through which it becomes effective. The constant clip made out of borrowed money by the interest rate, though it may not constitute a major part of total expenses, is in the long run a continuous drain of great importance in determining the profitability of enterprises.

MONETARY MANAGEMENT AND ECONOMIC STABILITY

• It is often asked whether proper management of money could assure the maintenance of economic stability. Would sharp business fluctuations be possible if money were never hoarded but all money paid out was promptly used in the purchase of consumer goods or in the production of capital goods? The question derives from the approach to economic activity through the analysis of the income flow. So long as all the income produced, it is asserted, is immediately returned to the flow through one channel or another, there will be no diminution of income and therefore no depression. Theoretically, the argument seems valid, certainly in so far as it refers to the elimination of sharp declines in activity; it is not so clear that an inflationary rise in prices would not be possible under the conditions stated. As a practical matter, the question is not decisive, because there is no effective way of assuring a continuous flow of all income into some form of goods or services. This is one of the points at which one should beware of totals. A certain amount of hoarding may be offset by an equivalent amount of money creation. A complete utilization of the current income stream may not allow for adequate expansion of necessary lines of endeavor. The distribution of income among individuals, corporations, and economic groups is vastly important. Its influence is not

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entirely measured by the distribution as between savers and spenders; it is also affected by the character of the spending and the purposes of the saving. In this instance as much as in any that can be produced, over-all figures cover up a large number of forces operating in opposite directions.

• There is no possibility of developing an adequate basis for policy formation from contemplation of the one abstracted and aggregated factor of the flow of savings in relation to the volume of outlets for investment. Many factors enter into the equation. Effective monetary management can influence willingness and ability to spend, to lend, and to invest. If it exerts this influence in such a way as to encourage continuous operation of the economic machine without over-acceleration or excessive retardation, then it does all it can to maintain lasting prosperity.

II. ROLE OF MONETARY AUTHORITIES

IN CHAPTER I an attempt was made to define money, to show some of the functions it performs in the economy, and to indicate how the volume, availability, and cost of money enter into the functioning of the economy. The authority which has special responsibility for the volume, availability, and cost of money is the Federal Reserve. In our illogical and atavistic setup, many agencies of the government have responsibility for certain factors in monetary management, but the principal responsibility lies with the Federal Reserve System. In the performance of its function, the System pursues certain broad objectives.

MONETARY OBJECTIVES

Establishment of the Federal Reserve System in 1913 was the culmination of a movement that had been under way for many years. The particular evils which the System was intended to correct were the inelasticity of the volume of currency and credit in the country and the concentration of reserves in financial centers. Objectives of Federal Reserve policy, as visualized by the promoters of the Federal Reserve System, were limited in the main to the desire to avoid money panics and recurrent periods of credit stringency. These objectives are well-expressed in the preamble to the Federal Reserve Act, which reads: "An act to provide for the establishment of Federal Reserve Banks, to furnish an elastic currency, to afford means of rediscounting commercial paper, to establish a more effective supervision of banking in the United States, and for other purposes."

Currency elasticity has been achieved by the System, though

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the elasticity depends not on the special provisions about Federal Reserve notes on which the framers of the Act relied, but on the general machinery which the Federal Reserve System provides for meeting increasing needs of currency and absorbing redundant cash. Reference is made in this connection to the chapter in the official Federal Reserve booklet entitled, "Relation of Federal Reserve to Currency."¹

These limited objectives of the Federal Reserve Act, which was intended to be essentially a cooperative enterprise of member banks for mutual protection under government supervision, have undergone considerable expansion during the lifetime of the System. Accommodation of commerce and business, the one policy objective mentioned in the original Act in connection with the establishment of discount rates, can be considered still as the System's objective if the terms are interpreted in a broad way. To so accommodate commerce and business as to foster stable economic conditions is still an adequate though brief statement of the object of monetary policy, but it may be assumed that this interpretation of the phrase is not one that was in the minds of the framers of the Act. Monetary objectives have been variously defined from time to time. There has been a recurrent movement for insertion into the Act of a clause requiring the Federal Reserve to maintain stable prices. There have been added in various sections of the Act phrases such as "to prevent injurious credit expansion or contraction," and "to prevent the excessive use of credit."

The objective of monetary policy, as now generally recognized, is not limited to the maintenance of stable prices; there have been examples of price stability while a serious economic collapse was in the making (the latter part of the 1920's was such a period). Nor is the objective of monetary policy full

¹ See appendix, p. 139.

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employment by itself since, among other reasons, the relationship between monetary policies and employment is not sufficiently direct to make this a feasible guide for current credit policy. Nor can the objective be defined as an adequate volume of investment and maintenance of favorable conditions in the capital market, there being times when developments in the capital market are a stage or two removed from matters of immediate consideration in formulating monetary policy. It is now widely recognized that no single guide can be adopted as an adequate basis for monetary policy. The broad objective may be stated to be to contribute through the regulation of the volume, availability, and cost of money to the maintenance of stable economic conditions and a rising level of economic well-being. Specific applications of this broad objective differ from time to time. There may be times when commodity prices should be a leading guide to policy; at other times it may be security prices, or the volume of capital flotations and the structure of interest rates. Because the immediate focus of policy must change from time to time, the general principle must be expressed in broad terms. Stable economic progress, the broadest objective, is generally accepted as being the test of the effectiveness of monetary policy. It is with reference to this broad objective that the discussion of monetary and credit policies must proceed.

FUNCTIONS OF THE FEDERAL RESERVE SYSTEM

Our central banking system differs from that of other countries in that the country is divided into twelve Federal Reserve districts—each served by a Federal Reserve Bank. Each bank has a board of directors with a certain measure of responsibility for the Bank's operations, while the Board of Governors of the Federal Reserve System (the Federal Reserve

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Board), which is a government body in Washington, has overall supervisory and coordinating powers. While the Board is appointed by the President and reports to Congress, it has a different status from most other government agencies. The long terms of the members (14 years) and the relationship to the Federal Reserve Banks, through the Open-Market Committee and otherwise, give the Board a position of independence and continuity which is important in carrying out its functions. Directly or through the Federal Open-Market Committee, of which it constitutes a majority, the Board is responsible for the formulation of national policies, while the individual Federal Reserve Banks have primary responsibility for relationships with individual member banks and with the business communities of their respective districts. The general structure of the System has been described in many publications and need not be rehearsed here. For purposes of this discussion, the Federal Reserve System will be treated as a unit without reference to the distribution of authority and responsibility among its different parts.

The Federal Reserve System has the power to influence materially the amount, the availability, and the cost of money. It has much less power over the intensity of the use of money or the purposes for which it is used. As was stated in the preceding chapter, the System's influence is exercised principally through its control of the volume of reserves on which the banking system bases its credit operations. Commercial banks operate for profit and ordinarily it may be assumed that they will utilize practically all the lending power they possess. When there are excess reserves not brought about by deliberate policy, this is the result either of an unusually rapid inflow of gold from abroad or of a condition in this country in which opportunities for safe and profitable loans or investments are limited. In actual practice, excess re-

serves were large only in the 1930's when both of these conditions were operating. Disturbed economic conditions abroad resulted in a large flow of gold to the United States, while disturbed domestic conditions made business firms reluctant to borrow and banks reluctant to lend or invest. The consequence was the emergence of large unused lending power, or excess reserves. When gold comes in it is sold to the Treasury through the Federal Reserve Banks and results in additions to member-bank balances with the Federal Reserve Banks. These balances constitute member-bank reserves. Gold, therefore, is in effect a competitor of Federal Reserve Bank credit. When banks receive gold from abroad, they can expand their operations without resort to the Federal Reserve Banks, and when gold leaves the country, the banks either lose excess reserves or, if there is no excess, must contract their loans and investments or apply for additional reserves to the Federal Reserve Banks. Gold movements, therefore, can be a limiting factor on the effectiveness of credit regulation by the Federal Reserve.

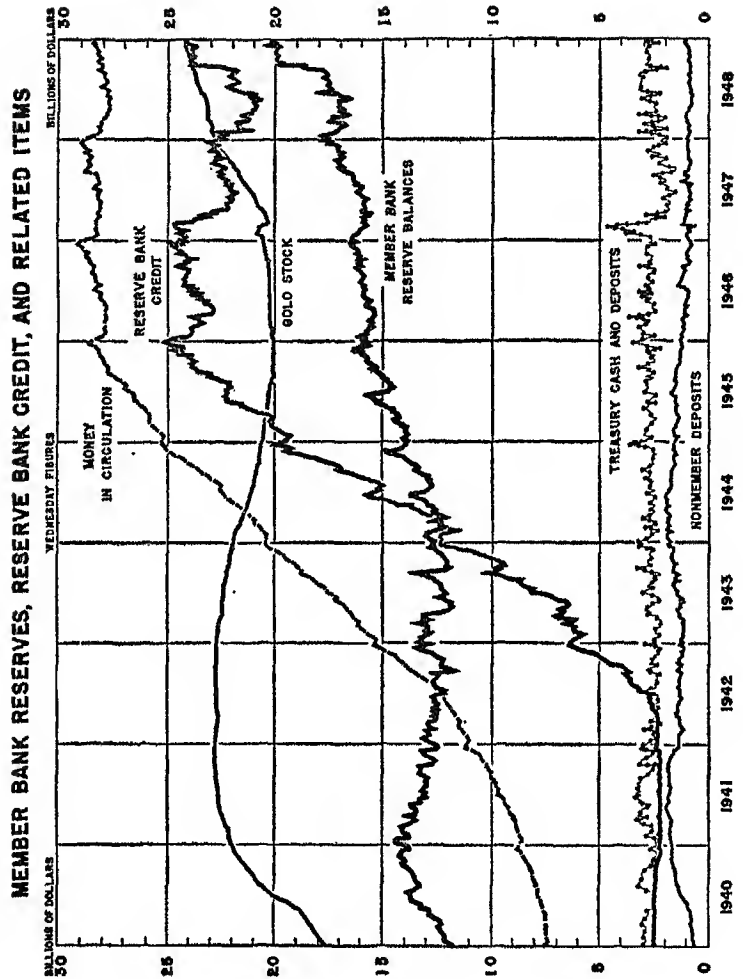
Soon after the First World War there was a large inflow of gold from abroad, as well as a return of currency from circulation. Both movements added to the reserves of member banks and enabled them to repay their indebtedness to the Federal Reserve incurred during and immediately after the war. Member-bank discounts declined from the maximum of \$2,750 million at the end of 1920 to less than \$400 million in 1924. So long as the inflow of gold could be absorbed by a reduction in the earning assets of the Federal Reserve Banks, it was not beyond the powers of the Federal Reserve to regulate credit, notwithstanding the gold movement. This movement, however, did reduce Federal Reserve earnings to a point where, for a number of years, they were barely able to make expenses and some Reserve banks in some years were obliged

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to dip into their surpluses to meet current operating cost. At that time, therefore, the principal limiting factor on the power of the Federal Reserve to regulate the volume of money was the extent to which the Reserve Banks were able to neutralize the effects of gold movements. By 1924 the situation was one in which the Federal Reserve could easily increase bank reserves but was strictly limited in its power to decrease them or to prevent their further increase. With this experience, plans were proposed for the issuance of securities by the Federal Reserve Banks to absorb such reserves as they were not able to wipe out by the sale of securities, owing to the relative smallness of their holdings. It was also during this period and in the early 1930's that proposals were made to authorize higher reserves, even up to 100 per cent, on the growth of bank deposits originating from the inflow of gold.

In the 1930's, after recovery from the depression got under way and further accumulation of bank reserves created a potential danger of inflation, the Federal Reserve exercised its authority to double reserve requirements, thus absorbing a large proportion of the reserves created through the inflow of gold. This seems to be an appropriate method for adjusting the economy to large changes in basic reserves.

With the outbreak of the Second World War, and particularly after the entry of the United States into the war, the situation changed radically. The great demand for currency arising from war needs and the need to keep banks supplied with sufficient reserves for the purchase of government securities not taken by other investors resulted in the practical disappearance of excess reserves. In fact, the Federal Reserve felt obliged to reduce requirements for central reserve city banks from 26 to 20 per cent of their demand deposits, thereby releasing an additional \$1½ billion of reserve money to the banks. The chart shows the course of the principal factors



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affecting member-bank balances for the period 1940-1948.

At the conclusion of the war the amount of currency in circulation outside of banks was four times as large as before the war and bank deposits had tripled. Total loans and investments of member banks had increased from \$32.6 billion to \$107.2 billion and their holdings of government securities from \$13.8 billion to \$78.3 billion. During the war there was no gold inflow because foreign governments prevented its outflow. Instead, there was a loss of gold by this country because a large part of our exports to the Allies was on credit or under Lend-Lease, while our imports, chiefly from South America, were paid for in cash.

With the war's end, the situation changed again. Foreign countries, greatly in need of goods from America, were not only arranging for large credits in this country but were also shipping large amounts of gold. Member-bank reserve balances increased constantly. This did not, however, result in excess reserves because there was a lively demand for credit in this country and banks made full use of their lending power.

When the war ended in 1945, the banking and monetary picture was profoundly altered from anything that had existed in the past. Banks were holding many billions of government securities and had an unprecedentedly large volume of deposits. At the same time they were confronted with pressure for additional loans by business concerns and individuals whose operations were at peak levels. In 1946 further expansion of credit was moderated by the fact that the Treasury had built up more than \$25 billion of balances for which it no longer had need and which it used to a substantial extent to reduce the volume of bank-held debt. In 1947 the Treasury for the first time since 1930 had a substantial excess of receipts over expenditures and this surplus was also used in reducing bank-held debt. These operations exerted an in-

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fluence against further rapid bank credit expansion. With the exhaustion of excess Treasury balances and the prospect of disappearance of current Treasury surpluses, and with the continuance of full employment and expanding industries, the monetary authorities in 1948 were confronted with the necessity of reconciling their various responsibilities and of working out a pattern of monetary policy in a changed world.

The outstanding fact in this changed world from the point of view of monetary conditions was the huge expansion of the public debt, which had reached the level of \$250 billion. Public debt now is larger than the entire private debt, while in prewar conditions it constituted a relatively small proportion of the total debt. It is widely held not only by individuals but also by banks, insurance companies, trusts, endowed institutions, and other investors.

The Federal Reserve, therefore, must find a way of functioning effectively under new and unprecedented conditions. During the war it had undertaken the commitment to see to it that banks at all times were able to purchase as much of the government securities offered as were not absorbed by other investors. The proportion of the war expenditures to be covered by taxes was determined by Congress. The financial needs of the government in waging war determined total expenditures. The central banking authorities had an inescapable obligation to see to it that funds flowed freely to the government in response to its needs. Although the Treasury and the Federal Reserve did what they could to encourage purchases of government bonds by the public and by other nonbank investors, the unabsorbed balance amounted to over \$95 billion, about 40 per cent of the total amount borrowed, or a fourth of the cost of the war. Whether more could have been done toward financing the war by noninflationary methods may be of importance in considering future programs,

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but the situation after 1945 was one in which the results of financing the war had to be assimilated into the economy.

During 1947 and 1948, the Federal Reserve authorities exercised their powers to restrain bank credit expansion by moderate action. After having discontinued special war practices, described below, they undertook to restrain expansion by reducing bank-held short-term debt. They continued, however, the commitment to maintain long-term bonds at par.

Since the Federal Reserve System had a portfolio of government securities of considerably over \$20 billion, it was in a position to reduce member-bank reserves by any amount that it deemed desirable. Total member-bank reserve balances were only \$17 billion, so that it was clear that the Federal Reserve System theoretically was in a position to wipe out all member-bank reserves and cause the complete liquidation of all member banks. Obviously, the Federal Reserve Banks would never contemplate action of this fantastic description. It is useful to mention the theoretical possibility, however, to indicate that, on the purely mechanical side, the Federal Reserve System was equipped to control credit expansion, to cause whatever liquidation it thought desirable, and to absorb a very large amount of additional reserves. (The relationship of the Federal Reserve System to currency and to gold are described in Chapters VI and VII of the System's booklet on "The Federal Reserve System—Its Purposes and Functions," reprinted in the appendix. The mechanical operation of these factors on the position of the member banks and the Federal Reserve Banks therefore need not be discussed here.) Such limitations in the power of the System to control credit to the extent desired in view of the economic situation arose, therefore, not from a lack of ability to absorb reserves but from reluctance to foster conditions possibly, in the opinion of the authorities, more damaging to the economy than

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further credit expansion. The principal inhibiting factor was the authorities' solicitude about the effects of credit contraction on the government-security market.

SELECTIVE CREDIT INSTRUMENTS

In addition to regulating the total amount of bank credit, the authorities have the power to act specifically on credit going into certain fields. They can regulate the terms on which loans for the purpose of buying or carrying certain securities may be made. This instrument of regulation, which is incorporated into permanent law, prescribes the amount that can be borrowed in relation to the value of the security used as collateral; it establishes what is known as the margin requirement. By raising or lowering margin requirements the Federal Reserve can exercise a greater or lesser restraint on security loans. It operates by influencing not the supply of money, as do the more customary instruments, but the use to which the supply is put. Since this instrument deals with one of the strategic factors in the economy, the stock market, it can be used as a valuable complement to more general instruments of credit administration.

The other so-called selective instrument is the power to regulate the terms on which installment purchases can be made. Such a power was given to the Board by Executive order during the war; it was abolished by Congress in November, 1947, but was granted again for a limited period in the summer of 1948. Like margin requirements, regulation of consumer borrowing is directed toward the use made of credit rather than to its aggregate volume.

Neither of the selective controls can or should be depended upon as a substitute to regulation of the money supply, but both have functions to perform in two important fields of credit. They should be permanent tools of the monetary au-

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thorities and should be used in conjunction with the general instruments of credit regulation.¹

POWER TO STIMULATE AND TO RESTRAIN

The influence of money on the economy differs at different stages of the business cycle. In general, the powers of the System to prevent expansion or to bring about contraction are more effective than its powers to bring about a needed expansion. So long as the System has a substantial portfolio of government securities or of acceptances bought in the open market, it can reduce member-bank reserves to the desired extent by open-market sales out of its portfolio. If that is done, the banks, finding themselves short of reserves, are obliged to liquidate a multiple amount of credit or to apply to the Federal Reserve for accommodation through the discount of paper. Aside from the fact that member banks are reluctant to show large indebtedness to the Federal Reserve Banks and that Federal Reserve authorities discourage prolonged or continuous borrowing, the Federal Reserve System can also influence expansion through discount-rate policy. Borrowing by member banks can be made more or less expensive by raising or lowering the rediscount rate. A high discount rate may not only make it unprofitable for banks to discount for the purpose of lending the funds, but it also has an important psychological effect in that it indicates a policy of tightening credit conditions by the Federal Reserve. Through reducing reserves, therefore, and making their replenishment selective and expensive, the Federal authorities are ordinarily able to prevent a rapid expansion of credit.

It is more difficult to prevent a contraction or to cause a resumption of credit extension. When conditions appear to the banks to be unfavorable for lending, when prices are falling and the creditworthiness of potential borrowers is on the

¹ See also Appendix, p. 130 ff.

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decline, the banks may not lend money even though they have plentiful reserves. This condition prevailed in the 1930's, when member banks had as much as \$5 billion in excess of reserve requirements, but with depressed business conditions and a vivid memory of the banking troubles in 1930-1932, they were very reluctant to lend or to invest additional funds. At the same time the business community itself was cautious and potential borrowers with good credit standing were curtailing their operations and not applying for loans. There were plenty of individuals and corporations who would have borrowed if the banks had been willing to accommodate them, but this class of borrowers did not have adequate security or credit standing to obtain bank accommodation. For this reason the Reconstruction Finance Corporation and the Federal Reserve were authorized to lend directly to industrial and commercial concerns which appeared to them fundamentally sound but whose current credit standing was not such as to recommend them as borrowers to commercial banks. Direct loans to industry by the Federal Reserve Banks were helpful as an emergency measure in individual situations but never reached significant amounts.

Ordinarily, therefore, Federal Reserve policies are more effective in preventing expansion or bringing about liquidation than in promoting necessary expansion. This situation, however, like so many other things in the world today, has been reversed by the consequences of the recent war.

* From the monetary point of view the situation in postwar years was one in which strict control of credit expansion was clearly indicated and some liquidation might have been desirable. There was full employment both of men and of plant equipment. There were great unsatisfied demands for goods and services. There was an extraordinary accumulation of buying power, and prices advanced greatly once gov-

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ernment controls were removed. There is no doubt, therefore, that restriction of credit was the policy that should have been pursued by the Federal authorities. But possible effects on the market for government securities, with expected repercussions on general confidence, acted as a major deterrent.

The alternative to such monetary action in attacking inflation is direct controls. Experience indicates that price controls do not work unless they cover the entire field and are accompanied by rationing and allocation of material. Price and other controls are necessary in wartime when the freedom of individual action is necessarily suspended; they need to be maintained in a transition period until full-scale production of civilian goods is restored. At other times control of individual prices creates damaging distortions in the economy, while full-scale controls are inconsistent with freedom. A break in the circle—money, prices, profits, wages, more money, higher prices, etc.—could be made theoretically at any point in the chain, but the most direct approach and the one most consistent with free enterprise is restriction of the money supply.

In arguing against credit restraints under the conditions that prevail today, some bankers and businessmen claim that loans made for the purpose of increasing production are not inflationary because they result in more goods, corresponding to the increase in the amount of money with which to purchase the goods. This is a persuasive argument. The flaw in the argument is that when productive capacity is used to the limit it cannot be increased rapidly. Additional loans, even for productive purposes, place funds in the hands of borrowers which they can use only in competition with other productive enterprises. So long as there is no room left for rapid expansion of activity because of shortages of material and labor, additional resources in the hands of some firms will be bal-

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anced out by fewer resources going to other enterprises. This has been recognized by the American Bankers Association, which has conducted a campaign urging restraint in lending by banks throughout the country.

Some arguments about policy are pivoted on a discussion of the interest rate. It is said that higher interest rates do not prevent expansion when business prospects are good and that it is futile policy to try to control credit by bringing about a rise in interest rates. It is probably true, although only within limits, that during capacity operation a rise in interest rates would not of itself result in restraint on business activity. The limitations of that statement have already been discussed. But the crucial point is that restrictive policy by the Federal Reserve authorities is not aimed primarily at causing interest rates to rise. It is directed toward the availability of credit. By reducing the reserves in the possession of member banks, a policy of restraint makes it more difficult for banks to lend, and would make them more selective in their loan policy, both in the granting of new loans and the renewal of outstanding loans. In the aggregate it would necessarily result in less bank credit unless the banks borrowed from the Federal Reserve as much as the loss of reserves caused by open-market sales. If they did attempt to obtain anything like this amount, the borrowing would be under control of the Federal Reserve System, which is under no obligation to lend if it thinks lending undesirable and which can make borrowing expensive enough to discourage it.

The aim of a restrictive credit policy would be, as already said, to discourage a growth of bank credit. A rise in the interest rate would be a consequence that would have to be taken into consideration in managing the public debt and the market for securities. Higher rates would not be the objective but one of the inevitable results of a policy of restraint.

III. OUR MONETARY MECHANISM

ALTHOUGH REGULATION of the money supply is largely in the hands of the Federal Reserve System, there are parts of the country's financial mechanism and even of monetary administration not directly subject to Federal Reserve control. This section of the study will provide a brief sketch of the entire financial mechanism, indicating the channels through which the Federal Reserve can influence the entire structure.

FEDERAL SUPERVISORY AND LENDING AGENCIES

First, as to the banking agencies of the Federal government itself: three distinct agencies are charged with responsibility for bank supervision. The oldest is the Comptroller of the Currency, whose office was established at the time of the Civil War in connection with setting up the national banking system and the introduction of national bank notes. The Comptroller of the Currency has the power to charter national banks and to examine and supervise them. His functions in connection with national-bank notes are largely obsolete because these notes have either been retired or are in process of retirement. Such of them as are still outstanding are no longer liabilities of the national banks but of the United States Treasury. In the original setup, the Comptroller of the Currency was a member of the Federal Reserve Board along with the Secretary of the Treasury. Both officials were eliminated from the Board by the Banking Act of 1935. All national banks are required to be members of the Federal Reserve System. Banks with charters granted by

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states are permitted to join the System voluntarily when they have the prescribed amount of capital and conduct the kind of business that is consistent with the purposes of the Federal Reserve System. The Federal Reserve System has authority to examine national banks as members, but ordinarily it depends for this on the similar authority of the Comptroller of the Currency. The Federal Reserve has power to examine state member banks, but wherever possible it works out co-operative action with the state examining authorities to avoid duplication of effort. The third Federal agency is the Federal Deposit Insurance Corporation, organized by the Banking Act of 1933. The FDIC has primary responsibility for insuring all banks that belong to the insurance system in respect to deposits up to \$5,000 for each individual. The Corporation has the widest membership, including national banks, state member banks, and other state banks that, while not members of the Federal Reserve System, are members of the FDIC, and it is concerned with their solvency. To avoid duplication or triplication, it examines chiefly insured banks that are not members of the Federal Reserve System.

This organization of bank supervision is obviously not logical or in accordance with good administrative principles. It is an historical growth and it persists largely because of inertia and because it is difficult to dislodge vested interests. There is a natural reluctance on the part of the Comptroller of the Currency to be abolished, and there is no inclination on the part of the FDIC to become consolidated with the Federal Reserve System. There are also those who believe that division of banking supervisory authority among several Federal agencies means more freedom for the banks than would result if they were all under one centralized authority. The 1938 Annual Report of the Federal Reserve Board remarked that we have a crazy quilt of banking authorities. Much time

Our Monetary Mechanism

and thought has been devoted to efforts to work out a more logical system. So far no changes have been made. It can be observed that in human affairs logic is not always the best measure of expedient public policy. Starting from scratch with a clean sheet of paper, the existing setup would never have come into being, but it has developed with succeeding economic conditions, and inertia—the strongest force in human as in cosmic affairs—has maintained it. The irrationality has been mitigated by mutual consultation and by the working out of arrangements by which each of the agencies operates in a prescribed field in consultation with the other. The division and overlapping of authority has sometimes led to conflicts, but these have been rare and it is a question whether formal reorganization would be worth the effort, except as a part of a fundamental revision of banking law and of the administrative setup of the government as a whole.

In addition to the Federal agencies with responsibilities for bank supervision there are banking authorities in each of the states with jurisdiction over banks chartered by the state.

Aside from these agencies with direct control of different phases of banking supervision, there is a large number of other governmental agencies that engage in lending to farmers, to urban real-estate owners and home builders, to producers of commodities, to suppliers and consumers of electric power, and to many other groups in the population. Each of them is the outcome of special situations either where a worthy group of potential borrowers were unable to obtain necessary credit or where lending institutions overloaded with frozen paper needed government assistance to work their way out. Many of these agencies date back no further than the financial crisis of 1929–1933; others, like the Farm Credit Administration, go back a great many years prior to that.

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Activities of these agencies affect general credit conditions and the use of credit. They do not, however, affect the amount of money in existence because they have no power to create money. There is no occasion for consolidation with the Federal Reserve authorities, but a coordinating agency or mechanism of some sort should be worked out through which common credit policies could be developed. It is not good public policy, for example, when the Federal Reserve authorities are trying to contract credit, to have other agencies, dominated by their special problems, promoting the expansion of credit; or at a time when interest rates are rising in response to Federal Reserve action, to have other government agencies offer credit at fixed or declining interest rates.

A similar problem in the field of security loans has been worked out in a satisfactory manner. The Securities and Exchange Commission has general authority over the operation of stock exchanges, of practices in the exchanges, the prevention of manipulation of stocks, and similar matters. The legislation creating the Commission grew out of abuses that came to a head in the stock-market collapse of 1929. In the law establishing the SEC there is a provision by which the regulation of loans on stock-exchange collateral, for the purpose of trading in securities or carrying them, is given not to the SEC but to the Federal Reserve. This is on the theory that stock-exchange credit should be regulated in conformity with general credit policies pursued by the Federal Reserve. The arrangement has worked satisfactorily. The SEC, in its main objectives, is concerned with protecting investors from unfair practices in the marketing of securities. It is not primarily concerned with the volume of credit. The Federal Reserve, on the other hand, is concerned precisely with the volume of credit, and credit created for financing operations on the stock exchange results in deposits available

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for other purposes. Consequently, it is good administration for the Federal Reserve to control this particular feature of the securities market. It should be possible to work out a plan of coordination by which some of the terms of loans, including the rates of interest, that are made by other government lending agencies would be controlled by or cleared with the monetary authority which resides with the Federal Reserve System.

BANKS AND OTHER NONGOVERNMENTAL LENDING AGENCIES

Outside the government there is in the financial mechanism a large number of institutions and agencies dealing with short-term or long-term credit and not directly subject to regulation by the monetary authorities. In first place are the banks, strictly speaking. Then there are agencies such as building and loan associations and brokers and dealers in securities performing some banking functions. These agencies all have something to do with lending money to individuals or corporations for specific purposes. Their policies are important in determining the general use to which existing money is put. Other than the banks, none of these agencies has the power to create new money. Their existence does not fundamentally interfere with Federal Reserve control of the volume, availability, and cost of money. In some respects their existence is a handicap to the Federal Reserve, in which membership is voluntary for all but national banks (which also could escape by giving up their national charters). Rigorous enforcement of credit controls and the imposition of high reserve or other credit requirements could lead many banks to convert themselves into institutions of a different character. This would diminish the power of the Federal Reserve to control credit conditions. In practice, this does not happen to any considerable extent and could be disregarded were it

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not for the influence it exerts in making the Federal Reserve authorities too hesitant about adopting strict credit policies. There is always the fear of an exodus of member banks. The setup has been described (by Mr. Eugene Meyer) as fostering competition in laxity. There is considerable historical justification for this phrase. However, there is no clear-cut method of improving the situation, except through cooperation among Federal government agencies as well as among Federal and state agencies with the general objective of serving the public interest. A merging of all these agencies or a subordination of their activities to one central bank would be politically impossible, administratively difficult, and might lead to excessive centralization of powers which this country rightfully dreads. The correction of the possible evils in this situation, as in many other human institutions, is a slow educational process with only gradual improvement in prospect.

An alleviating circumstance is that the great mass of bank deposits and particularly of demand deposits, which are the most active part of bank money, is in the hands of member banks of the Federal Reserve System and under Federal Reserve control. It is probable that the leverage which the Federal Reserve authorities have through control over the members of the System is sufficient for its purposes. Non-member banks and other lending institutions in most cases must lean on member banks for obtaining currency and on occasion for credit accommodation. In this way their operations are indirectly influenced by the monetary and credit policies of the Federal Reserve. The most desirable single unification of lending agencies would be a requirement that all institutions that hold deposits comply with the reserve requirements imposed on member banks. This would in no way interfere with the autonomy of state banking authorities in other respects.

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Separate mention should be made of the organizations that market and deal in investments: the issuing houses, the underwriters, and the dealers in securities. They do not create money and do not make loans but they constitute a powerful factor in the financial mechanism. Their function is to gather the funds accumulated by the people and to channel them into various types of enterprises. They are not only a powerful part of our financial structure, they are indispensable, even though along with serving an essential economic purpose they have been at times responsible for serious abuses. The Federal Reserve has no direct connection with these institutions. They are entirely concerned with the uses to which existing money is put rather than with the creation of new money. However, their activities are at the crux of the functioning of the economy, since they are a large factor in determining the amount and character of capital formation and consequently the nature of current investment. Large-scale institutional investors, such as insurance companies and trusts, should also be included in this category. Notwithstanding the relative remoteness of all these institutions from Federal Reserve control, it is to a marked degree through its influence on them that Federal Reserve policy finds expression. These institutions have an extremely efficient set of pencil sharpeners. To them a slight change in the interest rate may mean the difference in the timing and nature of undertakings. They appraise the reaction of the public to changes in interest rates as well as to business prospects. It is probably true, although not susceptible of proof, that central banking action, through its effect on interest rates and the availability of funds, exerts more influence on the course of economic developments via the capital market than through its immediate influence on bank-created short-term credit. And investment institutions are the dominant institutional influence in the capital market.

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In summary, our financial mechanism is the heritage of many years of growth and development. During this period the character of our economy and the functions of government have evolved from pioneer conditions to a highly integrated and technically advanced state. Many of these institutions have features that no longer fit into the financial structure as it now exists. A thorough overhauling of our financial organization, including the banking system, other agencies that perform functions hardly distinguishable from banking, investment institutions, and the governmental authorities that regulate them, may need to be undertaken in the light of the changed character and responsibilities of our economy. But the gradual process, which has resulted in the establishment and definition of functions of existing institutions, has also developed channels, formal and informal, for the regulation of these institutions. Clearer cut organization is desirable, but its absence is not an insurmountable obstacle to effective monetary management by existing authorities. It is a sensitive organization, integrated by its common denominator, money. Those who regulate the flow of money have an influence on the entire financial mechanism of the country.

IV. CRUCIAL POLICY DECISIONS BY THE FEDERAL RESERVE

FOR A BETTER understanding of circumstances that have led to Federal Reserve action and the consequences of such action, this and the two following chapters will review briefly the crucial policy decisions made by the Federal Reserve System in the thirty-five years since its organization.

POLICIES IN WORLD WAR I

When the Federal Reserve Banks were organized in November, 1914, the world was at war but the United States was not yet a participant in the conflict. During the war years prior to America's entry, the System was engaged in developing its organization and had no acute credit problems to meet. The reduction of required bank reserves in the original Federal Reserve Act and in wartime amendments, together with an inflow of gold, provided a basis for credit expansion needed in connection with the demand by the belligerents for exports from this country. After this country declared war on Germany in April, 1917, the government was obliged to float unprecedentedly large public loans and the first important policy action of the System was war financing. The method adopted was to establish a preferential rate on paper secured by government obligations when it was discounted by member banks with the Federal Reserve Banks. This was known at the time as war paper. The rate was fixed at a level which made it possible for member banks to finance public purchases of government securities on an installment basis—without cost to the purchasers for

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the accommodation. The rate paid to member banks was the coupon rate on the bonds. The banks, in turn, discounted the paper with the Federal Reserve Banks at a slightly lower rate, the difference compensating them for the cost of carrying the accounts. The consequence was a great expansion of member-bank and Federal Reserve Bank credit paralleled by a great expansion of currency in the form of Federal Reserve notes. The method proved effective in meeting the government's requirements. The credit extended was in the form of paper with short maturities. While the banks had a large amount of government securities and particularly of loans secured by such obligations, their accommodation at the Federal Reserve Banks was in the form of short-term discounts. The banks were desirous of reducing this indebtedness as soon as their customers repaid their loans. A great deal of importance was attached at the time to the fact that under the arrangement bank credit created to finance the war would be liquidated as soon as the public had saved enough funds to pay the installments due on the bonds. While the Federal Reserve Banks facilitated Treasury financing by according preferential treatment to war paper, they did not directly support the government-bond market and successive issues of bonds were floated at advancing rates of interest. Such support as was given to government bonds was handled by the Treasury with its own funds.

AFTER WORLD WAR I

When the war ended late in 1918, government expenditures did not decline rapidly for about a year and the Victory Loan was not floated until 1919. Installments on this loan were not all paid until the autumn of 1919. The Treasury was anxious not to have credit tightened until this final war financing had been accomplished. Recognizing that the existence

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of a large supply of money, together with an accumulated demand for civilian goods, still in short supply, was laying the foundation for inflation, Federal Reserve authorities were anxious to increase the cost of money to prevent further credit expansion. In the circumstances, however, they found that it was not feasible to act until late in 1919, when discount rates were raised. By the spring of 1920 the situation nevertheless had become still more inflationary. There was a vast accumulation of inventories, a great deal of speculation, and work stoppages owing to strikes. Prices had more than doubled on a prewar basis, credit expansion was on a large scale, and the gold reserves of the Federal Reserve Banks were approaching the minimum permitted by law. The Federal Reserve Banks again raised the discount rate, which went as high as 7 per cent in several of the banks, while several other banks adopted systems of rates graduated in proportion to the amount borrowed by an individual bank. This rate policy was supported by pressure exerted by the Federal Reserve Banks on the member banks to liquidate their borrowings and by warnings against the expansion of credit on the basis of inflated prices.

A turning point was reached in May, 1920, when prices throughout the world collapsed, led by a break in the silk market. Between the spring and autumn of 1920, commodity prices fell sharply. Agricultural prices which had advanced most fell the fastest and the lowest. There was a great deal of distress and an investigation of the Federal Reserve System's action was undertaken. The System was accused of a conspiracy to deflate the farmers. The accusation as it was formulated was not justified because the Federal Reserve authorities at no time desired a rapid liquidation or a radical decline in prices. They were guided by orthodox central banking rules that, with extremely high demand for credit

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and a large volume of money, the duty of central banking authorities is to pursue a restraining influence to combat inflationary danger. Federal Reserve Bank credit and member-bank credit, in fact, continued to increase throughout 1920, even at the higher rates. Not until after the price decline had run its course did bank credit begin to shrink. Nevertheless, popular feeling against the banking authorities ran high, though the Congressional investigating commission reported its conclusion that the Federal Reserve System was not responsible for the deflation.

In historical perspective, it is clear that the Federal Reserve action was not fortunate in its timing. Tighter credit conditions established earlier in 1919 might have prevented or moderated the inflationary rise of 1920 and the readjustment might have been less painful. But the necessities of Treasury financing made such action unfeasible. In time of war and during the early period after a war, a central banking authority as a practical matter is unable to act independently of the Treasury. It is probably true, looked at in retrospect, that the System, not having raised the rates adequately in 1919, would have done better by not taking drastic action in the spring of 1920, when the speculative bubble was ready to burst. It also appears that after the rates were raised in the spring of 1920, they could and should have been reduced more rapidly than they actually were reduced, which was not for a year after the advance. Other agencies, principally the War Finance Corporation, helped to mitigate the effects of the 1920 collapse and to shorten the depression. By the middle of 1922 the country's business was on the upgrade once more.

The collapse had serious consequences for farmers who had incurred large mortgage obligations on the basis of high war prices and found the carrying of this indebtedness and

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payments on maturity beyond their power when prices had dropped. This also had its effect on banking conditions since many farm mortgages in the hands of small banks turned out to be uncollectible when they became due in the middle 1920's. This started a wave of bank failures that, reinforced by subsequent developments, did not come to an end until the crisis of 1933, when all banks were closed and a new chapter in banking history was started.

RECOGNITION OF OPEN-MARKET POLICY

By 1923 the country—other than farmers—enjoyed extraordinary prosperity. Painful as the 1920 deflation had been, it was brief and by 1923 industrial activity was rising rapidly, employment was practically full, and prices began to advance.

An important policy decision in 1923 reflected a new understanding of open-market operations. By the middle of 1922 member-bank discounts, at a level of \$2,750 million toward the close of 1920, had declined to \$400 million. Concerned about their ability to meet expenses, Federal Reserve Banks began to purchase government securities in substantial amounts. It became apparent that, so long as member banks were still in debt to the Federal Reserve, purchases of government securities by Reserve Banks did not increase the total volume of Federal Reserve credit but merely enabled member banks to repay their discounts. The effects were different for the several Federal Reserve Banks. Purchases of government securities by Federal Reserve Banks in the interior had to be made largely in the central money market in New York. Funds paid out for these purchases were used by New York member banks to repay their indebtedness to the Federal Reserve Bank of New York. Discounts held by this Bank were liquidated rapidly and its earning assets declined accordingly, while the total volume of credit extended by the twelve Reserve Banks

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combined showed little change. These independent purchases by the individual Federal Reserve Banks were proving to be upsetting to the government-security market and the Treasury was interested in having them coordinated. A committee of Federal Reserve Bank governors was therefore organized through which all Federal Reserve Bank sales and purchases of government securities were henceforth to be made.

In the spring of 1923, in connection with open-market operations, a long step was taken in recognition of the need for national credit policies as distinguished from regional operations. The Federal Reserve Board adopted the principle that Federal Reserve Bank purchases and sales of government securities should be made to accommodate commerce and business and with general reference to prevailing credit conditions. This put open-market operations under the guiding principle of the law for discount-rate policy. At the same time the Committee of Governors was officially recognized by the Board and its operations made subject to consultation with the Board. As a step toward the development of national credit policy this decision in 1923 was of crucial importance.

INTERNATIONAL CONSIDERATIONS IN 1924

By spring, 1924, there was a slackening in the country's business and some apprehension about another depression developing. International influences were also important in the credit situation. The prevailing concept throughout the western world was that reestablishment of the gold standard and of exchange stability was necessary for postwar economic reconstruction. England in particular was anxious to see the pound at its traditional level of \$4.86 to the pound and to resume the free movement and trading in gold. In view of the drab domestic business situation and to cooperate in reestablishing exchange stability, the Federal Reserve authorities

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in 1924 adopted a policy of monetary ease, reduced the discount rates, and purchased a substantial amount of government securities. This further reduced the indebtedness of member banks and with the inflow of gold from abroad then taking place was reflected in a substantial growth of member-bank reserve balances. The volume of credit extended by member banks increased. In retrospect, the easing action by the Federal Reserve System appears to have been a mistake. It helped England to return to the gold standard in the spring of 1925, but it is generally conceded now that this return and particularly the reestablishment of the old parity was unwise for England, resulting in deflation in that country. In the United States, the action laid the foundation for the credit expansion of the late 1920's, particularly in security loans.

INTERNATIONAL COOPERATION IN 1927

A similar situation arose again in 1927. By then England had been back on the gold standard for two years and had suffered a great deal of hardship as a consequence. Belief in the curative power of the gold standard continued, however, and France sought to reestablish her currency on a gold basis. In the United States business was at a fairly good level but showed no signs of expansion; the tendency was somewhat downward. Many Continental countries were experiencing substantial difficulty in maintaining their currencies on the newly established bases put into effect in the preceding two years. To be helpful in the situation, the Federal Reserve System once more increased its purchases of government securities to maintain easy credit conditions in this country. This policy was determined at a conference in the summer of 1927 in which the heads of the central banks of England, France, and Germany participated. Discount rates were reduced in this country. This, together with an inflow of gold

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in the early part of the year, resulted in a rapid increase in member-bank balances and member-bank loans, particularly on securities.

There has been much criticism of this operation as one that helped to push along the speculative expansion in the security markets gathering momentum at the time. Yet this was a less clear-cut mistake in policy than that in 1924, because in 1927 after the middle of the year there was an outflow of gold which offset to a considerable extent the effects of Federal Reserve purchases of government securities.

On the basis of the 1924 and 1927 experience, one may well raise the question whether international considerations are a safe guide to domestic credit policy. So long as the gold standard was not only "in office" but also "in power," international movements of funds were a stabilizing influence. With the gold standard in a precarious condition, with exchange rates not having found their economic level, and with international movements of funds motivated more by the desire for safe refuge for capital than by differences in money rates obtainable in different markets, the transfers did more to aggravate than to cure undesirable developments. In a badly unbalanced world the delicate balancing mechanism of the gold standard cannot function properly.

For this reason, monetary management on the basis of human judgment has supplanted the more nearly automatic management—through gold movements—which operated effectively under the gold standard. One consequence has been the greater weight in monetary decisions carried by national as against international conditions. With forces that influence monetary conditions deriving less from impersonal factors and more from decisions made by officials who are keenly conscious of the needs and demands of their constituents, conditions at home and policies designed to bring gratifying re-

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sults in the short run have become more important in determining the course chosen.

RESTRAINTS IN 1928

By 1928 business in the United States was once more on the upgrade. Commodity prices were relatively stable and the credit expansion which continued found its expression as well as its occasion primarily in an increase in speculative activity in the security and real-estate markets. Throughout 1928 the Federal Reserve System applied restraining measures, increasing discount rates and reducing its holdings of government securities. The speculative movement had, however, become so powerful that banks were willing to incur indebtedness at the Federal Reserve Banks to meet the demands of their customers.

A lack of clear-cut understanding of the workings of the financial mechanism by the Federal Reserve authorities was evidenced during that year. Although the general policy was one of contracting credit and discount rates were advanced, the System reduced its rates on acceptances purchased in the open market. The System had particular solicitude about the acceptance market, which was its creation and its ward, but there was also considerable faith that credit that went into financing of agricultural exports would not have the same damaging effect on the economy as other kinds of credit. This was a complete misconception at that time. The credit extended on acceptances had already done its work when the member banks or the bill brokers acquired the acceptances. The sale of these acceptances to the Federal Reserve Banks had little to do with the origin of the acceptances. It represented merely a utilization of the cheapest window at the Federal Reserve Bank. The credit obtained by the sale of acceptances was not tied to the transactions that had originated the bills; it could

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be utilized for any bank operation, including speculative security loans. A large part of credit actually went into such loans at the time. It is curious how long the misconceptions which dominated the proponents of the Federal Reserve Act in 1913 continued to influence thinking. That Federal Reserve credit produces high-powered dollars, regardless of the window through which it is paid out or the character of the securities obtained in return, is now well understood by the authorities and is beginning to be generally accepted by bankers, but in 1928 this elementary fact was not yet firmly embedded in the thinking of the Federal Reserve authorities.

DIRECT ACTION IN 1929

The same confusion carried into 1929. The speculative situation was extremely serious. Security prices continued to advance rapidly, calling forth a large volume of bank credit to finance the operations. Business conditions were reasonably satisfactory but there were signs of a down turn, particularly in the building industry. It seems apparent now that the System should have pursued one of two policies: drastic curtailment of credit in the money markets to end the speculative orgy before credit tightness affected industrial and commercial conditions or, alternatively, a policy of relative monetary ease with an eye to business conditions, permitting the stock-exchange and real-estate speculation to burst from internal causes. Instead of following one of these policies, the System engaged in controversy. The Federal Reserve Banks wanted to advance discount rates; the Board did not permit these advances, issuing directions instead that banks which were large-scale lenders on the stock exchange should not be permitted to discount at the Federal Reserve Banks. This was completely unrealistic. The necessity for discounting

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arose from the fact that there had been gold exports after 1927 and that the Federal Reserve had disposed of its portfolio of government securities. The banks could not, in the aggregate, repay their discounts except through so drastic a contraction of credit that the country would suffer serious consequences. The Board's action against stock-exchange loans had a powerful effect in increasing the cost of borrowing for speculative purposes, but a rise in interest rates does not halt a speculative movement when profits of many points can be made in the course of one day. The action taken contributed toward a diversion of credit from the interior to the financial center whence it was redistributed through different channels. A large volume of security loans was also made not by banks at all but by business concerns throughout the country with idle funds, glad to place them in the stock market where the returns were greater than they could obtain elsewhere, including their own legitimate business. It was a dramatic situation with the Federal Reserve playing a confused and indeterminate role. Credit expansion persisted until the stock market broke in the autumn, to be followed by serious distress throughout the country and the beginning of the great depression of the 1930's.

It is not intended to imply that the reasons for the depression were all monetary. There were fundamental problems of distribution and of relationship between capital formation and consumption, as well as international economic maladjustments, which underlay the economic developments. Many volumes have been written on the subject. In this study emphasis is on the banking and monetary side of the situation, which is the direct concern of monetary authorities. As has been indicated, the policy of the System appears in retrospect to have been indecisive and somewhat contradic-

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tory in the period from 1927 to the end of 1929. It did not help to prevent the ominous economic developments and possibly resulted in making them more acute.

After the collapse of the market the Federal Reserve System acted with resolution to absorb the shock. Rates were reduced, securities purchased in the market, and the banks were enabled to take over the loans of customers seeking to withdraw their funds from the market.

DEPRESSION POLICIES: 1930-1936

Acute distress prevailed throughout the country beginning with the autumn of 1929 as employment diminished, prices fell, bankruptcies increased, and mortgages were foreclosed. Bank failures became epidemic. Throughout the succeeding seven-year period the Federal Reserve carried on a policy of monetary ease interrupted only by a brief period of credit stringency in the autumn of 1931, when England went off the gold standard and gold moved with extreme rapidity out of the United States. Discount rates and bill rates were briefly raised. This interruption was a mistake but an understandable one on the basis of gold-standard psychology. It accorded with the classical principle, enunciated by Walter Bagehot seventy-five years earlier, that in a crisis a central bank should lend freely but at a high price. This brief break in the easy-money policy was not of great consequence, as some academic critics have been inclined to believe. The Federal Reserve Banks held a large volume of deposits for account of foreign central banks and the System knew, as the commentators had no way of knowing, that if rates in this country were not advanced, these funds would be withdrawn in gold. The result would have been the same as the contraction of Federal Reserve credit which actually took place.

The Federal Reserve System also had difficulty at that time

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in pursuing the policy of ease which it had adopted because legal restrictions did not permit it to make loans except on short-term commercial paper and did not permit issue of Federal Reserve notes, except with this type of paper or gold as collateral. A substantial amount of gold was impounded as collateral, restricting the ability of the System to ease the situation by open-market operations. This was finally recognized in the Glass-Steagall Act of 1932, which authorized the use of government securities as collateral for Federal Reserve notes. Thereafter the System engaged in an open-market operation of unprecedented volume. It bought government securities at the rate of \$100 million a week for ten weeks, up to that time an unheard-of figure. It helped banks to meet the growing demand for currency and at the same time to reduce their indebtedness to the Federal Reserve; it diminished the pressure for credit contraction.

Action on credit, however, in the business situation of 1932 was relatively impotent. For a number of years member-bank reserves accumulated far in excess of the banks' legal requirements but this did not break the force of the depression. The easy-money policy probably moderated somewhat the ravages of the depression and helped establish a climate favorable to recovery. The depression, however, was so profound and its consequences so evil that it is difficult to establish the fact that conditions could have been worse had the System not pursued a policy of ease.

INCREASE OF RESERVE REQUIREMENTS: 1936-1937

Credit contraction continued. There were many bank runs and bank closings; people lost confidence in banks and withdrew large amounts of currency for hoarding. Conditions went from bad to worse until on the eve of the inauguration

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of the new administration in 1933 all banks were closed and were only reopened gradually as conditions permitted. When the banks reopened the financial storm had blown over. Partly because the liquidation of bank credit had proceeded far enough and partly because of a change in psychology in response to a change in national administration, money began to pour back into the banks and the financial stringency as such came to an end. Gold was coming into the country again at a rapid rate. With member banks still reluctant to expand credit, there was a large accumulation of reserves at member banks in excess of their requirements. The Federal Reserve authorities in 1936 and 1937 used their newly acquired power to increase reserve requirements, doubling the ratios. The authorities indicated that they were not contemplating a change in the easy-money policy but were only adjusting to a new reserve situation. They thought it wise to absorb excess reserves before they became the basis of a credit expansion. This action placed the Federal Reserve in closer contact with the market. With a smaller volume of excess reserves Federal Reserve operations would have more effect on member-bank activities.

The action in raising reserve requirements seems at this date to have been the correct policy. Its last stage, however, in the spring of 1937, was followed by some flurry in the government-security market and some signs of undue tightness. The Federal Reserve System was somewhat slow in easing conditions by open-market operations. It was afraid that purchases might start a flood of sales and that its action would be inconsistent with having moved in the opposite direction by raising reserve requirements. This is not surprising because it was a difficult and new situation, and the instrument was one that had never been tried. It is clear that vigorous action in the open market would not have

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been inconsistent with the large-scale adjustment made through raising reserve requirements. It would be no more inconsistent than the receipt of change from a large-denomination bill after payment for a commodity costing a smaller amount. Reserve requirements change in large amounts and affect all banks regardless of their particular reserve position. When additional reserves have become immobilized through administrative action and some banks find themselves deficient in reserves, there is nothing inconsistent in lending them support through the open market to facilitate the transition. At the time and in subsequent discussion the accusation has been made that Federal Reserve action in raising reserve requirements, and particularly the last installment of the raise, which took effect on May 1, was an important factor in bringing about the sharp business decline of 1937. There is nothing in the record to substantiate this accusation. Throughout the period the banks had substantial excess reserves and there was no marked tightening of credit conditions.

It may be said, in summary, that during the first quarter century of its operation the Federal Reserve pursued policies that, though not always properly timed, adequately emphatic, or entirely consistent, were in general harmony with the main objective of endeavoring to contribute to economic stability. That is, except in time of war.

Waging War as an Inflationary Process

through government securities presents a potential inflationary force. The potential becomes an actual factor of inflation to the extent that the securities are sold to the banking system.

WAGING WAR ON SLACK

During World War II, certain factors moderated the inflationary impact of war finance. The war was fought by the United States to a considerable extent on slack—that is, by the use of manpower and plant facilities that had been unemployed. To this mobilization of unused power there was added a considerable number of workers drawn from groups ordinarily not engaged in wage-earning occupations, such as persons below the usual working age or above it, and many married women who would ordinarily have remained at home. Part of the war effort was also met out of depreciation—without replacement—of existing plant, equipment, furnishings, and clothing.

It is an outstanding fact of the Second World War that in this country it was not accompanied by a decrease in civilian consumption in the aggregate. The entire war output, which was as large as civilian consumption, was superimposed upon the nation's ordinary volume of consumption. No other country was able to fight the war on that basis. This does not mean that the war had no impact on consumption. Certain goods, such as automobiles and other durable equipment, were not available and other goods, such as oil and sugar, were scarce. Furthermore, consumption by certain groups of the population, particularly the middle classes, distinctly declined. This decline was offset by increased consumption by those who had been unemployed prior to the war and by those whose earnings had been below the level of decent subsistence. The war was a powerful distributor of income and equalizer of consumption levels.

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We emerged from the war with our economic capacity, including plant and manpower, fully employed; with a volume of money, measured by currency and bank deposits, more than three times as large as before the war, and with a public debt of \$280 billion, held in part by individual investors, in part by insurance companies, trusts, endowments, and other corporate holders of savings, and in part by the banking system. The ownership of the public debt by the different groups at the end of December, 1945, and of September, 1948, is shown in the following table:

VOLUME AND OWNERSHIP OF UNITED STATES GOVERNMENT SECURITIES
(In billions of dollars)

	December, 1945	September, 1948
Held by banks:		
Federal Reserve Banks	24	23
Commercial banks	91	63
Held by others:		
Individuals	65	67
Insurance companies	24	22
Mutual savings banks	11	12
Other corporations and associations	30	21
State and local governments	6	8
United States government agencies	27	37
Total	279 *	253

* Owing to rounding, this figure does not equal the sum of components.

When the war broke out in Europe in 1939, the United States was beginning to emerge from a depression, in which the government had spent relatively large sums of money and floated a substantial volume of government securities. The authorities were concerned that government credit remain unimpaired in a war-ridden world. They determined on support of the government-security market, to prevent disorganization of this market and a decline in the value of government

Waging War as an Inflationary Process

bonds because of the war alarm. Pursuing this policy, the Federal Reserve in September, 1939, entered the government-security market as a vigorous buyer of bonds. Purchases in a short period after the outbreak of the war amounted to nearly \$500 million. As the war proceeded, however, and the United States remained outside the conflict, a calmer attitude prevailed. There was no further occasion for supporting the government-security market until the United States became a belligerent. The war had resulted in a renewed inflow of gold to the United States sufficient to meet the increase in the demand for currency, and government security holdings by the Federal Reserve Banks, after a brief upward move and a subsequent decline, remained at an approximate level of \$2½ billion, which had prevailed since early in 1934.

WORLD WAR II POLICIES

With the entry of the United States into World War II, the Federal Reserve authorities issued a statement to the effect that they would see to it that member banks at all times had reserves adequate to purchase such government securities issued by the Treasury to finance the war as were not absorbed by nonbank investors. Ordinary considerations of credit policy, such as the relationship between the volume of money and the amount of goods available for purchase, became secondary. The need to pave the way for a continuous flow of money into the government's war chest, enabling it to pursue the conflict without hindrance from the money supply, overrode ordinary requirements of credit policy. This is bound to happen in a war when a central bank, as an arm of the government, shares with the rest of the government and the country the conviction that to win the war is the dominant national purpose.

The amount of war expenditures was determined first by

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the necessities of the case and more directly by Congressional appropriations. The share raised by taxation was also determined by Congress. The kind of securities on which the balance was to be borrowed was the primary responsibility of the Treasury, although there was close cooperation between the Treasury and the Federal Reserve as to the timing and character of the securities to be issued. It is impossible in a record of war finance to segregate the action of the Treasury and of the Federal Reserve. It is clear from the record that they acted as a team serving the nation's needs. In the nature of the case and as a reflection of the different character of their primary responsibilities, however, the Treasury laid more emphasis on raising the war funds at as low a rate of interest as possible, in order not to burden the taxpayer any more than was necessary. The Federal Reserve, while supporting the Treasury's efforts in every way at its disposal, used its influence in the councils for use of methods of raising the money that would result in the minimum of inflationary pressures. The story of the Treasury and Federal Reserve relationship during the war is not a public record and cannot be discussed in detail except by the participating authorities. It must await a future chronicler. The fact that in wartime the requirements of the Treasury take precedence over accepted principles of monetary management has been mentioned. In subsequent paragraphs here, the two financial authorities will be treated as a unit and their actions will be considered as according with policies laid down by the United States government as a whole in pursuance of its wartime objectives.

When the United States entered the war, the money market was reflecting the effects of a long depression, together with disturbed political and economic conditions abroad. For a number of years the Federal Reserve had pursued a policy of monetary ease to maintain a climate favorable to economic

Waging War as an Inflationary Process

recovery. Concurrently, there had been a large-scale inflow of gold caused by disturbed conditions elsewhere in the world and purchases of war materials by Allied belligerents. Member-bank reserves had increased substantially, and even though reserve requirements had been raised by the end of 1941 to the full extent permitted by law, there were still excess reserves and money conditions were easy. During the depression, with only a limited demand for credit from applicants creditworthy in banking terms, interest rates had declined to an extraordinarily low level. Rates on short-time money were almost at the vanishing point. Long-time rates had declined but not to the same extent. Shortly after American entry in the war, rates in the market for government securities presented a spread from $\frac{3}{8}$ per cent for three months' bills to $2\frac{1}{2}$ per cent for long-term bonds. When the United States became a belligerent, it was decided by the authorities that the war should be financed at a rate for long-time money not exceeding $2\frac{1}{2}$ per cent, the then prevailing rate on long-term government bonds. This announced policy sought to make clear to investors that they had nothing to gain by holding back on investment in government securities, because none would be issued with a higher rate of return. In view of the necessities of the war this decision was unquestionably wise.

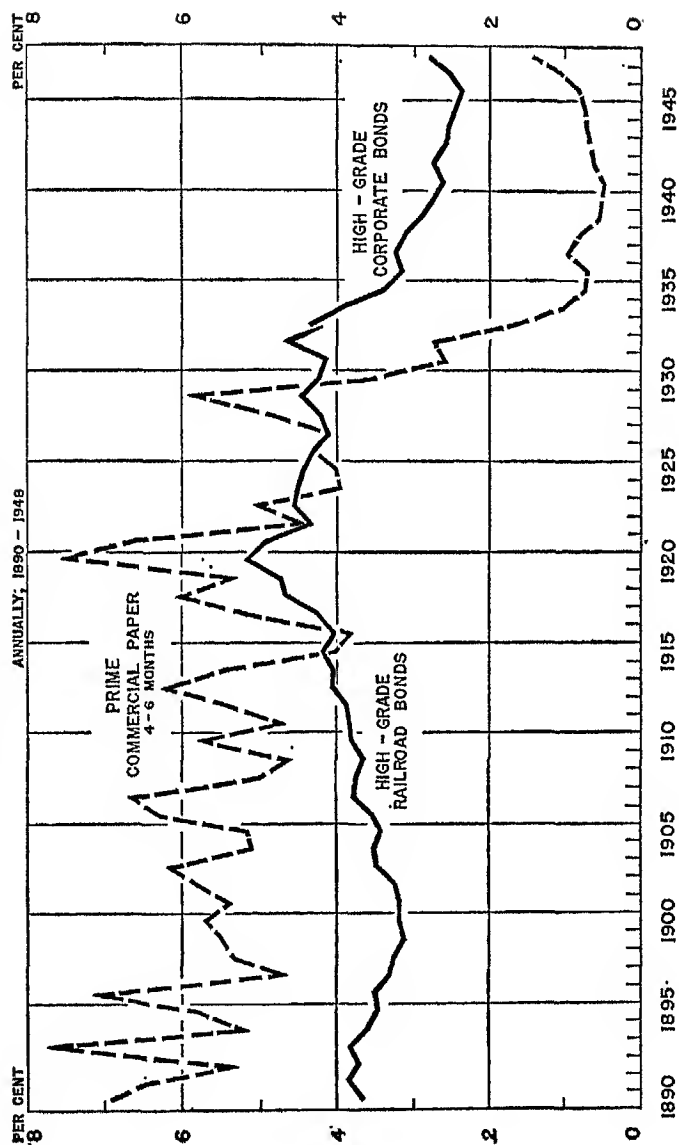
Along with this determination to maintain the $2\frac{1}{2}$ per cent rate on long-term bonds, a policy was adopted of maintaining the existing pattern of rates, perpetuating the extraordinarily wide range between short- and long-term money rates which had emerged from depression conditions. The adoption of this pattern was probably a mistake, and it certainly could not be carried out. The government can finance a war at any rate it chooses. It can let the rate be determined by market conditions, letting it rise in response to the increase in demand, or it can place the maximum rate at any level at which

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it proposes to support the bonds. Under our financial mechanism there is practically no limit on the ability of the authorities to support an established level. In fact, the authorities could finance a war without interest charge, meeting their expenses by the modern equivalent of printing money, that is, by obtaining funds from the Federal Reserve at a nominal rate of interest or no interest at all. What the government was powerless to do indefinitely was to maintain a predetermined spread between the rates on short- and on long-term money. Yet this is just what the authorities attempted to do.

That the structure of rates which prevailed in 1941 was not a usual one is indicated by the chart. In the more than fifty years covered there were more periods when short-term rates were above long-term rates than periods when the reverse was true. Relationships between long- and short-term rates reflect the immediate availability of funds, opportunities for their use, confidence in future stability, and other considerations. Short-term rates are relatively high when holders of funds do not wish to tie them up temporarily for fear of missing opportunities for secure and relatively profitable long-term investment. Long-term rates are relatively high when holders of funds believe that long-term opportunities are likely to improve and consequently hold back on their investment, being content while waiting to place their money in liquid short-term securities. The latter situation prevailed in this country in the thirties. In the forties, government policy tended to keep long-term rates steady at the low level they had reached in the preceding period, while short-term money was in demand; the rates would have advanced were it not for efforts by the authorities to support the earlier and no longer appropriate rate structure. Keeping short-term rates at their low levels, the authorities produced a constant downward pressure on long-term rates; the spread was too wide.

LONG- AND SHORT-TERM INTEREST RATES



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When it was determined that three-month Treasury bills would be maintained at $\frac{3}{8}$ per cent, a decline in the yield on long-term bonds was inevitable, though it did not develop before 1945. This point is illustrated by a chart. From a $2\frac{1}{2}$ per cent parity rate, long-term bonds declined to slightly above 2 per cent, in the period beginning January, 1945, and ending in the first quarter of 1946. The attempt to maintain the pattern of rates had strong inflationary consequences. Banks and other investors, assured of an established rate, could purchase the longer term securities yielding higher returns knowing that when they came within the range of shorter maturities they could be sold at a premium. The premium reflected the fact that the securities carried coupons at a rate appropriate to long-term obligations, while short-term money commanded a lower rate. This ability to "play the pattern of rates," as the process was called, encouraged the purchase of longer term bonds which, so long as they were supported at par or better, were as good as demand obligations yet yielded long-term returns. It is not improbable that the war financing could have been accomplished at no higher rates of interest and possibly at lower rates on the average if short-term obligations had not been supported at the unrealistically low level of return. More banks and other investors, to maintain liquidity and to stagger the maturities of their holdings, would have purchased more short-term securities, which carry a lower rate, thus reducing the amount of higher rate securities that the Treasury needed to issue. However, there is no way to demonstrate this. What is beyond question is that the pattern couldn't be sustained indefinitely. Efforts to adhere to it resulted in practically depriving the Treasury bill of its character as a market instrument; an overwhelming proportion of them found their way into the Federal Reserve Banks. Following the war, bond yields declined and yields on short-

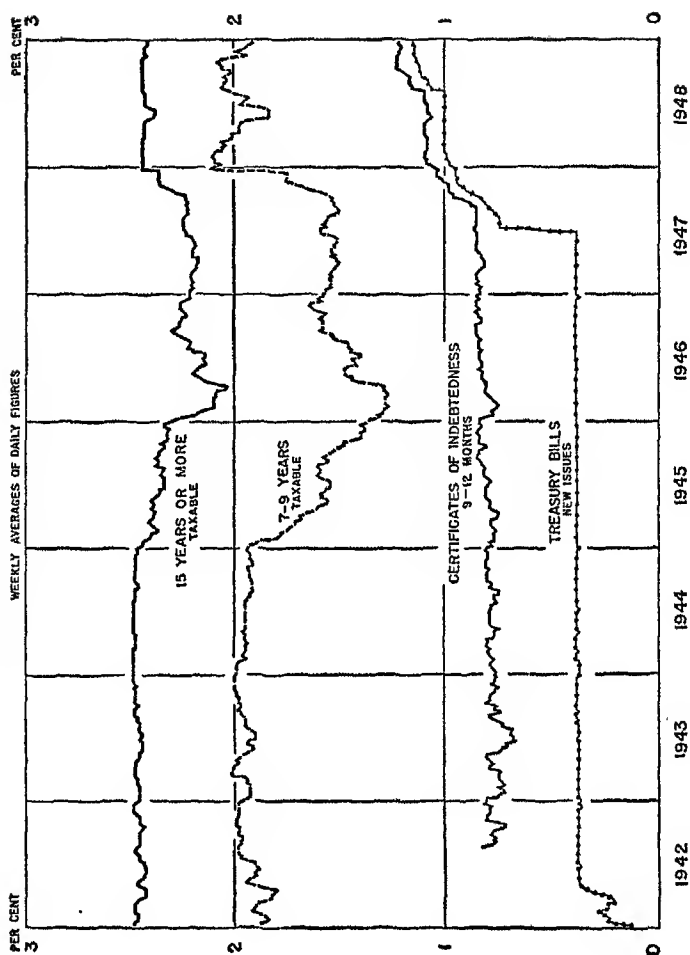
Waging War as an Inflationary Process

term securities—first notes and later bills and certificates—advanced. It is not unreasonable to believe that this resulted in a larger volume of bank purchases of securities and a smaller volume of nonbank purchases. The consequences were creation of more money and of additional inflationary pressure.

In line with its decision with respect to the rate structure, and to contribute to a smooth flow of war funds, the Federal Reserve stood ready to purchase at $\frac{3}{8}$ per cent any three-month Treasury bill offered. Coupled with a proviso that banks could repurchase the securities at any time at the same rate, this in effect converted Treasury bills into an equivalent of cash. Banks carried their excess reserves in this form since they could convert them into legal reserves at any time. The lowest rate paper that figured importantly in the market was the $\frac{7}{8}$ per cent one-year certificate.

The Federal Reserve also established a preferential discount rate of $\frac{1}{2}$ per cent for paper secured by short-term governments. This established the right of way of government securities over any other kind of paper, but was not, in fact, used to any great extent because banks had little occasion to borrow from the Federal Reserve. Another measure, this one established by law to ensure the willingness of banks to underwrite the government's borrowing to the necessary extent, was the exemption of government deposits from reserve requirements and from assessment for the Federal Deposit Insurance Corporation. Banks could subscribe to government obligations and pay for them with credit on their books without increasing their reserve requirements or their payments for deposit insurance. The recommendation for this legislation was motivated by the desire to have banks "standing by" in case the government needed them. It had a somewhat unexpected and undesirable consequence. During the war-loan drives, banks found themselves in an exceptionally easy

YIELDS ON U. S. GOVERNMENT SECURITIES



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reserve position. Deposits by individuals and corporations were withdrawn from the banks, with a consequent reduction in required reserves, and reappeared as government deposits not subject to reserve requirements. Thus, the banks, which did not directly participate in the purchase of securities during the loan drives, were able during those drives to buy outstanding government securities and also to make loans to customers for the purchase of government securities. In many cases speculators in government securities could buy large amounts on the basis of bank loans and sell them when the securities were issued at premiums, which generally became established soon after the securities became available. The premiums arose from the fact that the yields on long-term governments in the market were lower than the coupon rates.

The Federal Reserve authorities also found it necessary during the war to reduce reserve requirements for banks in New York and Chicago from 26 to 20 per cent. Funds raised by the government in these financial centers were being disbursed throughout the country wherever war industries were operating or war contracts were paid for. There was, therefore, a substantial loss of reserves by banks in these cities, and to avoid tight conditions reserve requirements were reduced.

All these methods of assuring instant absorption by the economy, including the banking system, of all government securities offered in the successive loan drives resulted in the creation of a powerful inflationary machine. Government securities acquired the character of cash.

This is not to say that inflationary dangers were ignored. Throughout the period of war financing, there was recognition that in so far as possible borrowing should come from non-banking sources, because these sources are less inflationary. The series of savings bonds as well as the tax-anticipation bond were developed to encourage this. These securities, which

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comprise almost a quarter of the debt, were the least inflationary because they came out of money that would otherwise almost certainly have been spent for consumption, and because they were widely held. Moreover, banks were not included in loan drives beginning with September, 1943, so that they were not prospective purchasers during the drives and could not be depended upon directly to make up local quotas for which loan-drive directors competed. Banks were not permitted, with minor exceptions, to purchase new government securities with a maturity of more than ten years and a return of more than 2 per cent. These measures unquestionably moderated the expansion of deposits and helped to limit the inflationary potential that was being developed. Further restraint of credit expansion was the establishment, under an Executive order, of authority for the Federal Reserve to limit the extension of consumer credit, particularly on purchases on the installment plan. There is no way of measuring the added inflationary impetus had these measures not been adopted. They indicate recognition by the authorities of the desirability of avoiding, in so far as possible, the creation of new money and their determination to act without interrupting the flow of money into the country's war chest.

MONETARY EFFECTS OF WORLD WAR II

What war financing did to our monetary picture is portrayed in the table below, which shows for December, 1939 and 1945, and for September, 1948, the volume of public debt, total loans and investments of banks, and their holdings of government securities and of other loans and investments; also the amount of bank deposits and currency outside of banks. Figures for gross national product, wholesale prices, and cost of living are also shown.

Bank holdings of government securities rose from 40 per

Waging War as an Inflationary Process

cent of total loans and investments of all banks before the war to 70 per cent in 1945. Bank deposits nearly tripled and currency increased more than fourfold. National product was about $2\frac{1}{2}$ times what it was before the war—reflecting in part a price level (wholesale) more than twice as high. These are the most significant monetary changes brought about by the war: the most important single item in the financial picture and in the banking picture was the public debt.

MONETARY EFFECTS OF THE WAR

	December, 1939	December, 1945	September, 1948
	<i>(In billions of dollars)</i>		
Total public debt	48	279	253
Loans and investments of all banks (exclusive of Federal Reserve Banks):			
United States government securities	19	101	74
Other loans and investments	31	39	59
Total	51	140	133
Bank deposits (adjusted)	58	149	144
Currency outside of banks	6	26	26
Total deposits and currency	64	175	170
Gross national product	90 *	213 *	256 †
	<i>Indexes</i>		
Wholesale prices (1926 = 100)	79	107	169
Cost of living (1935-1939 = 100)	100	130	174

* Annual totals. † Seasonally adjusted rate for third quarter of 1948.

This was the monetary condition at the conclusion of the war. As was said in opening this chapter, war is an inflationary process. The chief reason is the tremendous responsibility it puts on the financial authorities, the uncertainty of the magnitude of the demands that may be placed upon them, and their determination to be prepared for anything that may arise. Measures to avoid inflation take a secondary place and war therefore leaves an inflationary situation in its wake.

VI. POSTWAR MONETARY CONDITIONS AND POLICIES

AT THE END of World War II, profound changes had taken place in the economy of the United States. The country's productive capacity had been expanded and was employed to the maximum. Not only was there practically no unemployment, but seven million persons from groups not usually in the breadwinning class had been drawn into production. The public debt had increased from \$48 billion to \$279 billion. The money supply had increased from \$64 billion to \$175 billion. National income was at a rate of about \$200 billion a year, compared with about \$90 billion¹ at the outbreak of the war. The price level had advanced from about 79 on a 1926 basis as the war opened to about 107 as it ended. The relatively moderate price rise in the face of high demand and a redundant money supply was due to direct controls over prices and wages.

It was expected by many that immediately after hostilities ended economic activity would slow down rapidly. With an abrupt decline of government spending from an annual rate of \$100 billion to perhaps \$30 billion to \$40 billion, a rapid contraction of the flow of income and of employment appeared probable. Unemployment of as many as eight million persons was freely predicted for the early spring of 1946. These predictions proved to be erroneous. The accumulated demand for goods, along with abundant buying power, was such that the adjustment from government to private purchases

¹ Stated in dollars of the years in question; that is, no adjustment has been made for the change in the value of the dollar.

Postwar Monetary Conditions and Policies

and from war to civilian production was much faster than had been believed possible. Gross national product, which was at the rate of \$220 billion at the end of the war, dropped to about \$190 billion by the early part of 1946, but then rose sharply and advanced without interruption to close to \$260 billion in the fall of 1948. The surprising rapidity of conversion from war production to civilian production was nearly as great an achievement as the almost miraculous expansion in response to war needs. It was an exhibition of the strength and resilience of this country's economic machine.

POSTWAR EXPANSION

It is under these conditions of reconstruction that postwar monetary policy had to operate. The record of financial developments as distinct from physical output is far less impressive. The people—or at least a sufficient number of vocal groups—and their representatives were tired of wartime restraints. Practically all economic controls were discontinued in 1946 and an extremely sharp rise in prices followed, continuing to the autumn of 1948. Wholesale commodity prices increased from about 110 in mid-1946 to 170 at the beginning of 1948, and despite a sharp break in agricultural prices in the early months of 1948, the general upward price movement continued. Consumer prices in the middle of 1948 were at the highest level on record.

While anti-inflationary economic controls were quickly abandoned in most fields when the war was over, inflationary monetary policies, developed to facilitate war financing, were abandoned slowly, reluctantly, and only to a limited extent. With the rapid decline of government expenditures and a discontinuance of the need for additional borrowing by the Treasury, there was no further need for inflationary methods in managing the country's financial mechanism. Policies

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adopted for the war, however, continued for some time. Not until the summer of 1946 was the preferential rate discontinued for discounts secured by short-term governments. This action was only symbolic because banks had little occasion to borrow from the Federal Reserve. Another year elapsed before the buying rate of $\frac{3}{8}$ per cent for Treasury bills was discontinued and a still longer time before Treasury certificate yields were permitted to rise. The wartime exemption of Treasury deposits from reserve requirements and deposit-insurance assessment came to an end automatically by the terms of the law, six months after legal termination of hostilities.¹ The most important of the factors limiting control of credit expansion, namely, the support of long-term governments at $2\frac{1}{2}$ per cent, was still the policy of the monetary authorities in 1948.

Bank-credit expansion based on newly issued United States government securities ended in 1945. The government had acquired extraordinarily large cash balances through excess subscriptions to the Victory Loan in the autumn of 1945, and these balances were utilized to reduce bank-held debt. On the record there was a contraction of bank credit. This contraction was more apparent than real, from the point of view of the economy, since the elimination of redundant Treasury balances and the corresponding decline in government-security holdings by banks had only a bookkeeping effect. It did eliminate a potential source of inflation had these funds been used later, but it did not diminish the money available to the public for the purchase of civilian goods. If government deposits are ignored, the figures show a continuous rise in the volume of money, with some seasonal fluctuations, to the end of 1947. The decline in government-security holdings

¹ The law was enacted on April 13, 1943, and expired June 30, 1947, six months after the legal termination of hostilities, December 31, 1946.

Postwar Monetary Conditions and Policies

by the banks was offset to a substantial degree by a rapid growth in loans. From a low level of about \$19 billion in the middle of 1943, bank loans rose continuously to almost \$40 billion in the early months of 1948. This expansion of loans prevented a decline in the money supply and reflected as well as encouraged a rapid expansion of expenditures by industrial enterprises.

When business is operating at capacity, productive loans do not add to the total output but merely place firms in a position to compete for the limited supply of raw materials and finished products. In other words, in a period like the one under discussion even productive loans are inflationary. At such times, banks should retain the freedom of allocating their resources among customers, but they should not be given the opportunity to expand the total of their loans and investments, or of their deposits. While voluntary cooperation by banks and other enterprises can be helpful, and while a considerable measure of such cooperation was in fact given to the Federal Reserve, the nature of the responsibilities of private enterprise and the limitations on their actions in a competitive situation are such that effective restraining action can be exercised only by public monetary authorities. It is their responsibility and they alone are in a position to discharge it.

USE OF TREASURY SURPLUS

A surplus of current receipts by the Treasury in 1947 over expenditures contributed an anti-inflationary factor in the situation. The surplus was used to retire bank-held debt, largely at Federal Reserve Banks. In general, conditions in 1947 and 1948 were favorable to credit restraint. The use first of Treasury balances and later of Treasury surpluses for reducing bank credit created a situation in which prevention

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of further credit expansion was not difficult. Federal Reserve authorities during that period moved cautiously but in the direction of credit restraint. Support of short-term government securities was moderated. Treasury bills were allowed to rise in yield from $\frac{3}{8}$ per cent to over 1 per cent, and Treasury certificates from $\frac{7}{8}$ per cent to $1\frac{1}{4}$ per cent; the discount rate was advanced to $1\frac{1}{4}$ per cent and later to $1\frac{1}{2}$ per cent and reserve requirements for New York and Chicago banks were raised from 20 to 24 per cent. In the autumn of 1948, on the basis of authority acquired during the summer, reserve requirements were advanced further by 2 percentage points for demand deposits and $1\frac{1}{2}$ points for time deposits. Yields on government bonds rose somewhat. Federal Reserve support of long-term bonds was lowered to a level near parity, and yields gradually increased from $2\frac{1}{4}$ per cent to close to $2\frac{1}{2}$ per cent.

CAUTIOUS POLICIES IN 1947 AND 1948

The authorities, though acting with a great deal of caution, were moving in the direction of restraining credit. The reasons for this extreme caution are understandable. The authorities were confronted with a new situation in which government bonds constituted by far the dominant factor in the financial mechanism. There was great apprehension about the possible bad effects upon the whole financial structure, on capital formation and capital expansion, and on national psychology of a possible wave of selling of government bonds. The government also had to refund a large amount of debt maturing in the near future. There was reluctance to take any financial step that would interfere with the country's full employment and capacity production. International tension and uncertainty also were important

Postwar Monetary Conditions and Policies

factors in the situation, particularly in 1948. It was recalled that in 1920 vigorous action for credit control was followed by a sharp business recession. Congressional action in 1947 discontinuing the regulation of consumer credit contributed to the difficulty of credit control.¹ Consumer credit, which had declined sharply during the war, rose rapidly and by the spring of 1947 was in the largest volume on record.

A reasonable explanation of the credit policies pursued during 1947 and 1948 can be and has been made. The country was in a delicate condition, with a large number of unknown factors and an enormous expansion of the public debt and bank credit, full production and employment. The principal unhealthy factor in the domestic situation was the continued rise in prices. It is no easy matter in such conditions to take action which might be followed by a sharp decline in economic activity. The authorities would be held responsible for subsequent events even though a decline in activity might have been due to causes other than credit policy.

Congressional action was for the most part on the inflationary side. After abandonment of materials allocation and price and wage controls, and discontinuance of consumer-credit control, a substantial cut in taxes in 1948 increased the income available for spending by an annual amount of more than \$5 billion.

By the middle of 1948 the situation was again substantially different from what it had been in the three years following the war. Tax reduction, increased military expenditures, and large appropriations necessary for world reconstruction combined to produce a condition in which the monetary authorities were confronted with further grave inflationary dan-

¹ Authority to regulate consumer credit was reestablished temporarily in the summer of 1948.

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gers. That they were fully aware of this is clear from official reports and testimony before Congressional committees. Proposals to increase the power of Federal Reserve authorities to cope with inflation were made to Congress, as will be shown in the next chapter. Yet the authorities adhered to their commitment to maintain long-term governments at par. The hard fact of the matter is that no powers can be effective in controlling credit expansion so long as the commitment on long-term bonds remains in effect. The effectiveness of the proposals will depend on the willingness of the authorities to tighten credit conditions by putting pressure on bank reserves. To say that the System is prepared to tighten credit provided this does not result in a decline in bond prices is like a doctor saying that he will do all he can to cure the patient, provided this does not result in a decline in his temperature.

After November, 1947, when government bonds for the first time showed signs of weakness, the authorities purchased many billion dollars' worth of bonds, but were able to offset the effect of these purchases on bank reserves by reducing holdings of shorter term obligations. These reductions were made in part through sales to the market and in part through retirement of these obligations, made possible first by large Treasury balances and later by surplus Treasury receipts. Neither of these resources was available to the Treasury in 1948. In the circumstances, the only way that the System could exert a restraining influence was by seeing to it that the banks did not have reserves for further expansion. This could not be done while the banks could depend on the Federal Reserve to buy any long-term bonds that they chose to sell.¹

¹ For an extraordinarily complete presentation of policies pursued by the Federal Reserve in 1947 and 1948 and their effects on the supply of money, see *Federal Reserve Bulletin*, October, 1948, pp. 1205 ff.

Postwar Monetary Conditions and Policies

RESPONSIBILITY FOR BONDS AND FOR THE DOLLAR

This raises the question of the character of the government's responsibility affecting the public debt and inflation. The government has a precise legal responsibility to holders of government obligations, namely, to pay interest of specified amounts at specified times, and to repay the principal on maturity. It does not include a guarantee to holders of government bonds or other obligations of the United States that they may dispose of them at par at any time prior to maturity. It is a simple, inescapable, and relatively easy responsibility because the government can always pay its domestic debt either by taxation, by borrowing, or by printing money. A less clearly defined responsibility is a moral one for protecting holders of bonds from depreciation of the principal prior to maturity. It is clear that in an economy in which the public debt constitutes the dominant financial factor, the government, including the Federal Reserve authorities, cannot be indifferent to conditions in the government-security market. An orderly market must be maintained and it is desirable to prevent a decline of government bonds substantially below par. A situation such as developed after World War I, when small holders of government obligations, purchased to support the war effort, found themselves under pressure to sell these bonds at a 20 per cent discount, is surely to be avoided. The adoption of savings bonds, of which there are more than \$50 billion outstanding, has largely taken care of this problem. Savings bonds have a cash surrender value at any time printed upon them and are not subject to fluctuations in response to market conditions. Some stability and dependability with respect to the continuing market value of other government securities is also desirable, but the question arises whether the government's responsibil-

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ity for maintaining the buying power of the money which bondholders receive in interest and principal is not greater than its responsibility for maintaining the securities at par at all times. If the dollars paid out at maturity to holders of savings bonds or other bonds will buy only half of what the money would have bought at the time the investment was made, the government bears a heavy load of responsibility for having urged the purchase of the securities as the best protection for old age and emergencies or the best way to prepare for the purchase of homes and other durable goods when the war was over.

Is the holder more concerned about being able to sell his bond at par at any time, or to buy approximately as much for his money when he does sell the bond? Of the two responsibilities, that affecting the value of the money seems far greater than the responsibility for maintaining securities at par. As already stated, a large part of the securities, being savings bonds, are not subject to market fluctuations. They are held by small investors. Other securities are held largely by banks, insurance companies, and other large-scale investors. The decline in the capital value of securities held by banks could not be large enough to embarrass the banks. They are under no obligation to sell and bank examiners have been instructed to permit them to carry government bonds on their books at par. In case of unexpected deposit withdrawals, the banks can dispose of short-term governments or, as a last resort, can borrow from the Federal Reserve Banks. No serious difficulties can arise from this source. A great majority of other large holders of securities are more interested in the income they receive than in the current market price of the securities. A decline in the market price of the bonds would impose a penalty on sales of these securities which will be worth par at maturity.

Postwar Monetary Conditions and Policies

It is a mistake to assume that a decline in government-security prices below par would be an economic misfortune or would be the cause of disturbances that would lead to one. The Federal Reserve should feel free to pursue the policy that in its judgment would contribute most to over-all economic stability. It should tighten or loosen credit conditions as the situation demands. Maintenance of government bonds continuously at par should not be permitted to supersede or obscure the primary objective of the authorities. If greater or less support of the government-bond market be deemed necessary on nonmonetary grounds, then means should be found to use for such support nonreserve dollars which could not serve as a basis for multiple expansion of bank credit and the money supply. In fact, the question may be raised whether methods could be devised by which the support of the bond market, which is a fiscal rather than a monetary policy, could be handled by the Treasury and by the use of Treasury funds. This would release the energies and ingenuity of the Federal Reserve, which is the monetary authority, for undivided concentration on problems of monetary management.

VII. FEDERAL RESERVE POWERS

BY THE MIDDLE of 1948, with Treasury balances reduced to a working level and with no further substantial surpluses in sight, Federal Reserve policy had to depend more completely on the System's resources. There was also a prospect of continued gold movements into this country, which would add to bank reserves and to the credit base.

During 1948 inflationary pressures continued, though with less force. Between June, 1946, and June, 1947, wholesale prices advanced by more than 30 per cent, and between June, 1947, and September, 1948, by 12 per cent. There was a decline in prices in February, 1948, reflecting largely a sharp break in farm prices, but the price level soon resumed its upward trend; at the end of September it was higher than at the beginning of the year but it declined in the last quarter. Employment was still practically complete and the economy was working at capacity, though perhaps not at its greatest efficiency. But, with the prospect of expanding military outlays, there was no longer hope of a large Treasury surplus. On the contrary, with the reduction in taxes, there was a possibility of a substantial deficit. A campaign was undertaken to increase purchases of savings bonds with the hope that some of the increase in the public debt would be absorbed in that way. There was no question, however, that the critical period in the postwar readjustment had been reached. The question was whether there would be further inflation or whether the economy could be stabilized. Possibilities of readjustment would be much better if inflation did not proceed further.

Federal Reserve Powers

The money supply was larger in relation to output, even at the prevailing prices, than it had been, notwithstanding the fact that a considerable proportion of the unbalance had already been absorbed in two years of rising prices. The existing supply of money could carry considerable additional inflation, the more so since the turnover of money was still at a relatively low rate.

Federal Reserve authorities were fully aware of these facts. Exhaustive and convincing statements detailing them were made in testimony before Congressional committees. The question was not whether restraining action was necessary. The question was rather what power the System had to carry out a restraining policy, and what additional powers, if any, it required. The System can do little to influence the rapidity of turnover of deposits. It must work through the three factors on which it has direct influence, namely, the volume, availability, and cost of money. While forces beyond the control of monetary authorities might nullify its action, this constituted no reason for the System not to exercise such powers as it possessed for economic stability.

Technically, the Federal Reserve had adequate powers to restrain credit to any desired extent. With its portfolio of more than \$20 billion of securities, it could absorb any amount of existing bank reserves, or any likely increase through a gold inflow or return of currency. The question, therefore, was not whether the System had the power to control inflation—it unquestionably had that power—but whether its exercise under the present legal arrangements was feasible and whether it would cause greater disturbance and damage to the economy than that threatened by further inflation.

Of the \$23.2 billion of government securities held by the Federal Reserve Banks on November 3, 1948, about \$5 billion were Treasury bills; about \$6 billion certificates; less

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than \$1 billion were notes, and somewhat over \$11 billion bonds. Considerable contraction of the credit base, therefore, was still possible through liquidation of Federal Reserve holdings of short-term obligations, with no need to dispose of bonds about the stability of which the Federal Reserve and the Treasury had considerable solicitude. Bills and certificates in the portfolio of the Federal Reserve Banks had been reduced by over \$9 billion during the year ended November 3, 1948, while bond holdings increased by \$10½ billion. The net change for the year was an increase of more than \$1 billion in government obligations in the portfolio of the Federal Reserve Banks. During the year additional reserves were derived from gold imports of more than \$1½ billion and reduction of about \$0.4 billion in money in circulation. As a net result of all these factors as well as less important and transitory influences, member-bank reserve balances increased by \$2¾ billion during the year. Notwithstanding increased reserve requirements which immobilized the greater part of the added resources, there was some growth in the inflationary potential.

After mid-1947 money rates moved upward. With the dropping of the commitment to buy all bills offered at ⅜ per cent, the rate on Treasury bills advanced from ⅜ to over 1 per cent. The rate on certificates advanced from ⅞ to 1¼ per cent, and the rate on Treasury bonds from 2¼ to 2½ per cent. Rates charged by member banks to their customers advanced, though moderately, during 1948.

A move to reduce the System's portfolio would make it necessary for banks to dispose of some of their government securities or to liquidate some loans. Excess reserves of banks were relatively small and were largely concentrated outside of the financial centers, at banks that are less sensitive to credit movements. New York and Chicago banks had practically

Federal Reserve Powers

no excess reserves, requirements in these two financial centers having been raised to 26 per cent of demand deposits. The remaining power that the System had was an additional 4 per cent for demand deposits at these banks and of 2 per cent at other member banks. The total remaining authority for immobilizing reserves amounted to about \$2½ billion.

ALTERNATIVE COURSES

The problem, therefore, presented itself squarely whether the Federal Reserve would pursue one of three possible policies: first, to permit further credit expansion through reserves supplied by the purchase of securities offered, or through reserves arising from gold imports, without offsetting these by corresponding increases in reserve requirements or reduction in the government-security portfolio; second, to hold the volume of bank credit constant, making no changes in the aggregate of the portfolio of securities except in so far as the credit base was increased through gold imports or return of currency from circulation; third, to attempt to reduce the credit base by reducing the security portfolio by a larger amount than any additions to the credit base. To contract credit would risk starting a deflationary movement along with the danger of disorganizing the security market to a greater extent than the authorities were willing to contemplate. The real alternatives were between the first two courses of action: further expansion, or stability at the existing level.

Of these two alternatives, the choice should be stability. With the portfolio that the System held, stability of bank credit could be achieved with the powers that the System possessed and this could be done without endangering either the continuance of the prevailing level of economic activity or the maintenance of an orderly market for government securities.

If the system chose a policy of maintenance of the level of

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bank credit, permitting no further growth, use of instruments in its possession would accomplish this purpose. It would not need to abandon support of the government security market. It could continue as in preceding months to balance its purchase of bonds by the sale of short-term obligations or by raising reserve requirements. True, a paradox would arise in that this procedure permits the Federal Reserve to support the bond market without easing credit conditions, but makes it impossible to tighten these conditions. If the Federal Reserve takes out of the market with its left hand what it puts in with its right, it can keep bank reserves unchanged. To make bank reserves less available, however, with the aim of discouraging expansionary pressures, these policies will not work. To tighten credit conditions it is necessary to be prepared for the interest rate to advance. This advance might at first be confined to short-term rates, but it is likely to spread to long-term rates. If the long-term interest rate went up, its reciprocal, the price of bonds, would decline. If bonds are not to be permitted to decline under any circumstance, that is, if long-term interest rates are not permitted to rise, there can be no assured way to tighten credit conditions.

In a policy of holding credit constant, a source of disturbance could arise from the pressure for loans, the consequent sale of short-term securities by the banks, and an advance in short-term rates to an extent that would make them approximate the longer-term rates, with the possibility that these rates themselves might be affected. This would be likely to find expression in a rise in the rate on high-grade, long-term bonds of corporations and of state and municipal governments. Such a rise might induce holders of government bonds to attempt to dispose of them so as to invest the funds in higher yielding bonds other than those of the Federal government. A substantial volume of sales of long-term government bonds

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by large-scale investors or by a sufficient number of other investors would result in a downward pressure on the market price of the bonds and a rise in the yield possibly above $2\frac{1}{2}$ per cent.

In the autumn of 1948 such a movement developed on a considerable scale. Insurance companies sold large amounts of government bonds and invested the proceeds in mortgages and corporate obligations. Since the Federal Reserve felt obliged to buy these bonds rather than let them seek another market, possibly at a price under par, Federal Reserve holdings of government bonds increased substantially. Between July 28 and September 15, Federal bondholdings rose from $\$6\frac{1}{2}$ billion to $\$8\frac{1}{2}$ billion. These additions to the bond portfolio were offset by sales of short-term government obligations. After that date increased reserve requirements went into effect, and further large purchases of government obligations, both long and short, followed. Thus, the increase in reserve requirements did not result in diminished availability of bank credit, but merely in a transfer of assets from other holders to Federal Reserve Banks. Up to a certain point the Federal Reserve could follow this procedure. It could raise reserve requirements and offset the effect by purchase of bonds. It could also offset the effect of bond purchases by the sale of short-term governments so long as they lasted, but it could not bring about significantly tighter conditions in the money market by such operations or make bank credit less available for business loans.

Federal Reserve action could not tighten credit so long as additions and subtractions from bank reserves offset each other. Nor could this offset be maintained indefinitely. If expansionary pressure continued, banks would be free to make additional loans, replenishing their reserves by sales of government securities to the Federal Reserve. As will be re-

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called, selling securities to the Federal Reserve Banks has an advantage, from the member banks' viewpoint, over discounting paper, which member banks are always free to do, in that the sale of securities does not result in indebtedness and consequently in pressure for liquidation.

These fundamental considerations are confused in public thinking and official discussion by failure to consider the entire cycle of development. Effective credit control is not possible so long as (1) credit conditions are not permitted to tighten, with a consequent rise in interest rates and a reciprocal decline in riskless bond prices, and (2) additions to bank reserves can be obtained by the market at its own initiative without borrowing from Federal Reserve Banks.¹

ADDITIONAL POWERS REQUESTED

The Federal Reserve authorities asked Congress for additional powers. They asked for authority to increase reserve requirements above the then permissible maximum level. An increase of 4 points on demand deposits and 1½ points on time deposits was authorized by the special session in the summer of 1948, with the proviso, however, that no changes made under this authority shall continue in effect after June 30, 1949. With these additional powers the Federal Reserve could absorb more government securities and offset the resulting additions to bank reserves by a rise in reserve requirements. An increase of 1½ points on time deposits and of 2 points on demand deposits was adopted effective in September, 1948.

To make it more feasible for the Federal Reserve to prevent

¹ Since this was written, conditions have changed so that the Federal Reserve has had no occasion to support the bond market but, on the contrary, has been able to sell a large volume of bonds. This in no way changes the principle that bond support as a paramount consideration is inconsistent with a policy of tightening credit conditions.

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expansion and yet protect the government-security market, the System also asked for authority to impose a reserve requirement to be held in government obligations over and above the cash requirements. This device for insulating another portion of the public debt from market influences would be rational, provided it resulted in greater freedom for the Federal Reserve to operate on the credit base with less concern about the possible effect of such operation on the government-security market. The proposal presented to Congress would limit these additional reserves to short-term governments. This technical detail of the proposal was conceived at a time when long-term bonds were strong and short-term securities were in slight demand. It would not be the best way to proceed if the demand for short-term securities revived with a rise in short-term money rates, and when the vulnerable part of the public debt was in the price of long-term bonds. In arguing for the proposal, it was stated that it would decrease the ratio of expansion possible on a given credit base. This is a dubious consideration, however, because the ratio of expansion, in so far as it is measured by deposits or money, would not be reduced except to the extent that the banks purchased the short-term securities from the Federal Reserve and not elsewhere. While increased reserve requirements to be held in government securities would result in less bank funds being available for loans, they would not decrease the money supply, because security holdings by the banks, just as their loans, are represented on the liability side by deposits, that is, by money in the hands of the public.

In the autumn of 1948 it was evident that no proposals involving new powers could go into effect because Congress could not consider them before 1949 and the controversial nature of the subject was likely to mean many months before a plan could be adopted. It was the part of wisdom for the

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Federal Reserve to make its plans for handling the situation with the powers that it already had. When the opportunity for additional legislation arose, a rounded-out plan that would immunize some of the public debt, particularly long-term debt, might be considered together with such improvements in the technical methods of handling reserves as have been under consideration. It would then be desirable to permit cash to count as reserves, to subject all banks that accept demand deposits to the same reserve requirements as member banks, and to rationalize the classification of banks with reference to the character of business they do rather than to their geographical location. It would also be desirable at that time to request power for the Board to impose on deposit growth after a given date higher reserve requirements than those applicable to deposits in existence on that date. This would eliminate the *ex post facto* character of changes in reserve requirements. Under the prevailing practice, when reserve requirements are advanced, all banks in the group to which the ruling applies must have a higher ratio of reserves than they had before the change was made. Banks with excess reserves can meet the increase without difficulty. Banks which have only the required minimum of reserves, however, find themselves, without any fault on their part, deficient in reserves, as a result of legitimate activities prior to the change in requirements. This feature in changing reserve requirements makes it difficult for the authorities to make changes, since it has elements of inequity. If the emphasis is on preventing further bank credit expansion, a requirement that *growth in deposits* shall be subject to higher reserves is the logical approach. Because of the large number of banks in this country, this method would carry administrative difficulties. But the market for Federal funds would overcome most of these difficulties and methods for handling such a system of re-

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serve requirements can be devised. Banks which experience an expansion in deposits could obtain in the market sufficient Federal funds from banks whose deposits are contracting to make it possible for them to adjust their position. Over-all expansion of the money supply, however, would be made more difficult by subjecting it to a higher rate of reserve requirements. This rate does not need to be as high as 100 per cent but it could be substantially above the rate required for existing deposits.

A fundamental principle of central banking is that its policies must be simple, direct, and understandable. This is not only because of its clear and uncomplicated objectives—to encourage expansion at a time of business decline and contraction at a time of inflation—but also because central-banking action depends for its effectiveness on popular support. To give this support the public must understand the action. Explanations at the time action is taken do not help much and often confuse; the action must be such as to speak for itself.

Complex central-banking machinery and money-market relationships are the media through which the authorities must work. Understanding of these complexities cannot be expected from the public. Neither is it necessary, any more than full understanding of air waves is required of the radio listener. What is necessary is comprehension of the objective that the monetary authorities aim to achieve. If it is clear that the objective is to contribute to economic stability, then the essential methods are also clear: to ease or to tighten credit conditions in accordance with current requirements. Nothing, not even solicitude about the market for government bonds, should interfere with the pursuit of the general objective by the appropriate technique. If the test of central banking is "masterful administration of the unforeseen," then

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surely the tools of this administration must be the solid principles fashioned on the anvil of the seen.

FINANCING FUTURE DEFICITS

Since it seems probable that the country may once more enter upon a period of Treasury deficits, it may be desirable to indicate briefly what past experience suggests as the best way to finance necessary future deficits with a minimum of interference with economic stability.

If a deficit arises from government outlays in alleviating economic distress and combating a depression, it is generally agreed that the deficit should be met by new money, that is, by the sale of government obligations to banks. To avoid the difficulties that arise from the issuance of a large volume of marketable long-term bonds, the securities issued should consist of short-term paper of the kind that appeals to banks.

If the deficit arises from the necessity of waging war or from large-scale preparations for war, financing should proceed on the following plan:

1. Make the deficit as small as possible by raising as much as possible by taxation.
2. Offer nonmarketable bonds to the public. If necessary, make their purchase compulsory, making the bonds redeemable only after the emergency has passed. (This is one method of compulsory saving.)
3. Raise the rest of the needed money by the sale of securities at a nominal rate of interest to the Federal Reserve Banks. To prevent the inflationary effects of this method of providing money, impose high reserve requirements on bank deposits created after a given date. If Treasury surpluses appeared after the emergency was over, the debt held by the Federal Reserve could be reduced or paid off entirely. If the cost of handling the new deposits without adequate ad-

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ditions to earning assets made the operation of banks unprofitable, they should deal with this problem through service charges to their customers. This method would place the cost of using the banks' service on those who availed themselves of bank facilities and in proportion to their use of these facilities. It is probable, however, that bank earnings would not suffer unduly under the plan.

By adopting these methods of financing a military deficit, the inflationary impact would be greatly reduced. It would not be eliminated altogether, since the deposits created by the government's borrowing from the Federal Reserve would add to the amount of money available to bid for goods. But the element of multiple expansion of bank credit would no longer aggravate the situation. Complete elimination of inflationary pressure from large-scale government expenditures could be achieved only if these expenditures were financed entirely by taxation.

Borrowing from nonbank investors would not be inflationary in so far as it involved funds that otherwise would find their way into the spending stream. In so far, however, as it tapped funds that had been and were likely to remain idle, it would increase monetary activity. Borrowing of nonreserve dollars from the Federal Reserve would be a way to finance the balance of Treasury requirements not covered by taxation and borrowing of existing funds through the direct creation of money by a government agency. This would involve no radical innovation. Under conventional practice, money is also created at the behest of the government, but this is done through the sale of securities to banks operating under private ownership and management. As has been demonstrated in recent years, large-scale holdings of marketable public debt by private investors create serious problems for monetary authorities. The proposed method would not only save interest

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charges and avoid distortion of bank assets, but would also avoid the erection of further obstacles on the road of the Federal Reserve in the pursuit of monetary policies with the sole objective of contributing to economic stability.

War and preparation for war is economic waste; it can be paid for only by increased production or by reduced consumption. Taxation and inflation both reduce consumption, but the reduction by taxation is far more equitable and its effects terminate when the drain is met. Reduction of consumption by inflation is inequitable in its impact and has effects that reach far into the future.

Sound monetary management of war finance, therefore, includes high taxation, large savings—compulsory, if need be—and, if these sources are insufficient, the creation of nonreserve money. The painful impact of such a program on the people is one cost of war, which carries with it many greater costs in life, in treasure, and in freedom. This is the monetary cost of war and the monetary reason for the maintenance of peace.

VIII. INTERNATIONAL MONETARY FACTORS

IN DISCUSSING monetary conditions in the United States, principal emphasis has been given to domestic conditions, for they are the subject directly under consideration. But conditions in the United States are also an important factor in world developments and, in turn, are greatly influenced by these developments. The day of economic isolation, as of political isolation, is over. There never was a time when America was not greatly influenced by foreign developments. So long, however, as the forces worked through well-organized channels that had become habitual, there was a tendency to take them for granted and to exaggerate the degree of American self-sufficiency. After two world wars had disorganized these habitual channels, it became more apparent how great the influence of foreign conditions is and the American people have become much more conscious of these influences.

The first period in the life of the Federal Reserve was spent in financing a world war of European origin. In the 1920's and the 1930's the disorganization of the exchanges in Europe, the political uncertainties, and the consequent flow of gold into the United States were constant factors in monetary conditions here. Foreign loans, both governmental and private, played a considerable part in economic developments during the interwar period. The conversion of the United States from a debtor to a creditor country resulted in a gradual realization that continuous export surpluses are not feasible for a country which is not using the proceeds of the surplus to service its foreign debt. A growing realization of the neces-

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During the recent war, there was a suspension of commercial factors in our relations with Allied belligerents, as we met their needs largely on Lend-Lease. With European needs supplied without payment, our increased purchases in the rest of the world resulted in a substantial loss of gold while the war lasted. After its termination, the world's great need for American goods resulted in a resumption of gold movements to this country. With foreign countries lacking products to sell to us in exchange, payment in gold continued, notwithstanding the large volume of American dollars placed at the disposal of other countries by direct government grants, by loans through the Export-Import Bank, and by credits extended through the Economic Co-operation Administration, the International Bank for Reconstruction and Development, and the International Monetary Fund.

RESPONSIBILITIES OF WORLD LEADERSHIP

All these international forces are reflected in monetary conditions in the United States. While peaceful and relatively balanced conditions prevailed throughout the world, and while the gold standard was in operation, excessive exports by any country resulted in gold movements into that country and a rise in prices, tending to reverse the movement. Funds moved readily from country to country in response to slight differences in interest rates. Exchanges could not fluctuate beyond the limits set by the gold points and unfavorable balances of payment were settled in gold. This delicate mechanism, regulated largely by the dominant position of Britain in the commercial world and of the Bank of England in the financial world, was terminated by the upheavals of two world wars and the interwar period. The United States now, as the possessor of a large part of the world's gold reserves and, more importantly, as the one country which has

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surplus goods, has been placed in the position of economic leadership. This introduces a new hazard in the maintenance of world economic stability. Stability of the American economy, which has in the past gone through periodic fluctuations from prosperity to depression, has become a matter of the gravest concern to countries all over the world. On the Atlantic coast and in the financial center of New York, men, machinery, and understanding necessary for the assumption of this new responsibility have gradually developed. There is not, however, the same degree of tradition and skill that England had developed over a century or more, while the interior of the United States is only lately beginning to realize the degree of mutual dependence existing between this country and the rest of the world. It is difficult, both economically and psychologically, for a country like the United States to take account of foreign developments. Its foreign trade is only a small percentage of its national output. In England, economic life is dependent on imports and exports.

We often point with pride to the fact that foreign trade constitutes only a relatively minor proportion of our national output. This is one of the cases where a total is misleading. For many individual commodities and many industries, foreign trade constitutes a large and in some cases a major portion of the market. The difference between active and inactive foreign trade, even in the aggregate, may spell the margin between prosperity and depression in the United States. Political and economic understanding of our role in the world economy, and informed handling of international problems with reference to long-term forces, has become an essential condition of world reconstruction.

In recognition of these forces the United States took a lead not only in the establishment of the United Nations—action that contrasts radically with this country's refusal to partici-

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pate in the League of Nations only a quarter of a century ago—but also in the organization of the two international financial institutions: the International Bank for Reconstruction and Development and the International Monetary Fund, which are under control of international boards of directors, but have thus far dealt primarily with the world-wide demand for American dollars. The large grants and loans extended by the American government for the reconstruction of Europe are almost unbelievable to any observer who has grown up in the atmosphere of provincial self-sufficiency. Our public men are gradually and in many cases reluctantly learning the lesson that there is for us no choice between isolation and leadership, but only between leadership and disaster. This country is committed to encouragement of individual enterprise and political liberty. It can maintain these two fundamental approaches to life only if it succeeds in working out a policy in international affairs that will lead gradually to reconstruction of a functioning world economy.

The implication for monetary management of these observations, voiced frequently in recent years, is to sharpen recognition of the need to maintain economic stability in this country, an anchor to world stability. A disastrous inflation in this country, followed by a collapse, would at this stage be more serious in its effects on world conditions than it would have been when the United States was still a debtor nation, dependent in its international financial dealings on expert financial management by the London money market.

In the postwar years, credit policies pursued by the Federal Reserve authorities were not sufficient to remove inflationary pressures in the face of continuous large additions to the reserve base through a gold inflow. Aid in world reconstruction and the rebuilding of European production for export both here and elsewhere in the world is, therefore, important

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not only on humanitarian and broad political and economic grounds, but also on the technical basis of avoiding serious aggravation of inflationary pressures in this country.

This is not the proper place to discuss in detail the many phases of international financial conditions and the best methods for handling these forces on the basis of farsighted self-interest. It is enough to point out that monetary management in the United States at this time more than previously carries with it the necessity of adjustment to world-wide forces which constantly play upon the American economy and are in turn affected by the course of developments in the United States. For example, prices in America are important in the effectiveness of financial aid extended by this country to the rest of the world. As prices here advance, the buying power of our loans or grants to foreign countries declines. Even more serious in its effects on the world would be a decline in American production and buying power. The goal of continued high production, rising standards of living, and stable values in this country, which is urgent for the people of the United States, gains in urgency by the effect that conditions here have on the rest of the world and by the repercussions of world conditions on the American economy.

The strong economic position of the United States in world affairs, the product of a rich natural endowment, years of arduous development, and the devastating effect of war on the rest of the world, calls for broad-gauge, farsighted, and courageous policies by American monetary authorities. It has become the duty of monetary management in this country to strive for economic stability not in the United States alone but throughout the world.

APPENDIX

Reprint of Chapters II, III, IV, VI, and VII from "The Federal Reserve System; Its Purposes and Functions" (Board of Governors of the Federal Reserve System, Washington, D.C., 1947)

CHAPTER II. FUNCTION OF BANK RESERVES

In the regulation of the supply of bank credit, or money, the Federal Reserve depends chiefly on its ability to increase or decrease bank reserves, which constitute the legally required basis of bank credit, or money.

Commercial banks, like other business organizations but unlike the Federal Reserve Banks, are in business for the purpose of making money. When investors put their money in the capital stock of a bank they expect to earn a return on their investment and look to the managers of the bank to make this return as large as possible within the limits of safety. The bulk of a bank's earnings comes from the returns it receives from loans to customers and holdings of securities. Consequently it is usually a bank's policy to put as much as possible of the money it receives as capital and as deposits into loans and investments. Every bank is required by law, however, to hold as reserves an amount of uninvested funds equal to a designated portion of its deposits.

Historically, reserve requirements were imposed by law for the purpose of protecting depositors—to assure that banks did not expand credit to the point that they could not meet their depositors' withdrawals. This was before establishment of the Federal Reserve System, when there was no central bank at which a bank could discount paper in order to obtain additional reserves in time of temporary need. Conse-

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quently reserve requirements, although they restrained credit expansion, did not protect depositors; the banks could not pay out to their depositors the funds they were required to keep as reserves. Other ways of protecting depositors have since been developed and bank reserves have come to be considered primarily as the medium through which the money supply can be regulated. It is because the Federal Reserve can influence the volume of reserves available to banks that it can influence the money supply.

If a bank is a member of the Federal Reserve System, at the present time [June, 1947] it is required to keep the following percentages of its deposits as reserves:

Time deposits, all member banks	6
Demand deposits:	
Reserve and central reserve city banks	20
Other member banks	14

On the average these percentages work out for all member banks at about 15 per cent. As will be explained later, reserve requirements are subject to change by the Board of Governors of the Federal Reserve System within certain limits. Banks that are not members of the Federal Reserve System are subject to reserve requirements that vary from state to state.

Bank reserves are the basis of our money system. Their operation is described below in general and somewhat simplified form. When a member bank receives a deposit of \$100, in currency or in the form of a check on another bank collectible through clearing, it must deposit \$15 with a Federal Reserve Bank as required reserves against the deposit and is free to lend or invest the remaining \$85. This percentage of reserves represents the general average required under existing law and regulation, taking all member banks and all types of deposits into consideration. When there is an adequate

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demand for loans from customers or a supply of suitable securities in the market, the bank will invest practically all of the \$85 and will keep as reserves only the \$15 prescribed by law. In practice the bank will keep a little more than the \$15 because the law requires it to keep its entire legal reserve with the Federal Reserve Bank, and in addition the bank needs some cash in its till to meet the demands of customers without delay. But since currency can always be obtained promptly from the Federal Reserve the amount kept in bank tills is relatively insignificant. For purposes of exposition it may be assumed, therefore, that all of the money above the required 15 per cent is lent or invested by the banks. In practice this was not the case during the depression and the period prior to our entry into the war, largely because gold imports were providing reserves and the business situation was not conducive to the expansion of loans. More recently banks once more tend to make use of nearly all their available funds.

It is on the relationship between the volume of reserves and the amount of bank lending that the Federal Reserve chiefly depends for regulating the supply of money. Methods possessed by the Federal Reserve for influencing the amount of bank reserves will be described in the next chapter. The present chapter attempts to describe how changes in bank reserves affect the volume of money.

Assume that a bank has \$8,500 of loans and investments, \$1,500 of reserves with the Federal Reserve, and \$10,000 of deposits, leaving out for the present other items in the balance sheet. The bank's ratio of reserves to deposits is at the legal minimum of 15 per cent. Consequently, if a customer wants to borrow, the bank cannot meet his needs out of its own resources because it has no funds available for lending. It must obtain additional funds if it wishes to make additional loans.

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For the purpose of describing the operation of the banking system, let us assume that there is only one bank and that all the people keep their deposits with this bank and go there to obtain all their bank loans. Let us give the bank enough resources to make it possible to think of it as representing all the banks in the country. Let us assume that the relevant items in its balance sheet are as follows (in billions of dollars):

Loans and investments	85
Reserves with the Federal Reserve Banks	15
Deposits	100
Ratio of reserves to deposits	15 per cent

The bank would not be in a position to make any additional loans or investments: its funds would be in use up to the limit permitted by law. Let us assume that the Federal Reserve believes that additional loans will be in the public interest and that it adds \$10 billion to the bank's reserves in a manner that also increases the bank's deposits by the same amount (using one of the methods described in the next chapter). Then the simplified balance sheet of the bank would be (in billions of dollars):

Loans and investments	85
Reserves	25
Deposits	110
Ratio of reserves to deposits	22.7 per cent

The bank would have a higher ratio of reserves to deposits (22.7 per cent) than is required by law (15 per cent). Therefore, it could make additional loans and investments. A little figuring will show that the bank has the \$16.5 billion of reserves required for its deposits of \$110 billion and also has \$8.5 billion of reserves above requirements, or excess reserves. Let us assume that the public is eager to get additional money and wants to borrow as much as the bank will lend. Let us assume also that the proceeds of the loans will be kept on deposit with the bank. This is not a far-fetched

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assumption, because borrowers most likely want the money in order to pay other depositors in the bank. While there will be transfers from one deposit to another, no deposits will be withdrawn from the bank, and the total of deposits will remain at the higher level made possible by the increase in reserves. Another calculation will show that on the basis of the \$8.5 billion of excess reserves the bank can add \$56 billion to its loans and investments. The bank's balance sheet would then be (in billions of dollars):

Loans and investments	141
Reserves	25
Deposits	166
Ratio of reserves to deposits	15 per cent

This simplified picture of bank transactions indicates that a deposit of \$10 billion of reserve money with the bank gave rise to a growth of \$56 billion in loans and investments and of \$66 billion in deposits. This calculation, which leaves out of account many complications, shows what a powerful instrument Federal Reserve action can be. It can provide the basis for an increase in the money supply not merely by the amount that it adds to the bank's reserves, but by about six times that amount. This is true because there can be a multiple expansion of deposits on the basis of the additional reserves.

Consider now the course of events in case the Federal Reserve decides that there is too much money and that the amount should be diminished. Suppose that it reduces the bank's reserves by \$5 billion, using a method that will reduce deposits by the same amount. The balance sheet will then read (in billions of dollars):

Loans and investments	85
Reserves	10
Deposits	95
Ratio of reserves to deposits	10.5 per cent

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The bank would be deficient in reserves to the extent of 4.5 per cent of deposits, or more than \$4.2 billion. In order to comply with the law the bank, if it were not able to call on the Federal Reserve, would have to call loans or sell investments, and thus absorb deposits to the extent of about six times its deficiency in reserves, that is, by \$29 billion. If its depositors repaid loans or repurchased \$29 billion of investments by drawing on their deposits, the result would be (in billions of dollars):

Loans and investments	56
Reserves	10
Deposits	66
Ratio of reserves to deposits	15 per cent
(the legally required minimum)	

Once more we see the powerful effect of Federal Reserve action, this time in the direction of contraction. By reducing the bank's reserves by \$5 billion the Federal Reserve caused a liquidation of \$29 billion of loans and investments and a reduction of \$34 billion in deposits, or money.

It is because of the fact that the Federal Reserve by adding to the bank's reserves can enable it to increase its loans and its deposits by several times the amount added that Federal Reserve dollars are often called "high-powered" dollars as compared with ordinary deposit dollars, or "low-powered" dollars.

In our exposition so far we have considered one bank, large enough to represent all the banks in this country, as doing all the banking business. We have assumed that the bank will lend or invest as much money as the law will permit. This has often been true of the banking system in the past, and is approximately the situation at the present time [June, 1947]. We have also assumed a uniform reserve requirement of 15 per cent, which represents the current average of the requirements on both types of deposits, time and demand, in all

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groups of banks, and we have assumed that all the money lent by the bank will be kept on deposit. To the extent that the public chooses to withdraw some of the money in currency, this will not be the case. In a later chapter, changes in the public's demands for currency from time to time will be described. It is sufficient for the purposes of this chapter to know that the people's demand for currency changes in response to business conditions and is not affected directly by the amount of loans made by the banks. It is, therefore, proper to disregard currency withdrawals in a description of the way bank credit expands and contracts.

The process of reserve operation in the simplified situation in which one bank does all the banking business may now be transferred to the more complex situation in which thousands of banks make loans and investments and hold deposits.

It has been seen that our consolidated bank can expand its loans and investments by as much as \$56 billion if the Federal Reserve adds \$10 billion to its reserves. No individual bank can do that because borrowers may wish to take the money out of the lending bank. In fact, a borrower is more likely than not to use the deposit created by his loan to write checks to pay various people. He has borrowed the money presumably for the purpose of making payments; he would not ordinarily undertake to pay interest on a bank loan for the purpose of carrying an unused deposit account. Consequently, a bank does not lend more than it has in free funds; if it did, it would not be able to honor its depositors' checks. How, then, can the banking system lend at least six times as much as it obtains from the Federal Reserve if each individual bank of which the banking system is composed cannot lend any more than it receives? Is this not a paradox?

What appears to be a paradox is really a simple and understandable matter. In substance what happens is similar to

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what happens when a given amount of money, by being passed from hand to hand, buys several times as much as its face value. In order to establish a parallel between the two, let us assume that all of the people through whose hands the money passes will put aside 15 per cent of all their receipts as savings and immediately spend the other 85 per cent. The first person receives \$100; in accordance with the condition just laid down, he puts aside \$15 and spends \$85—let us say to buy clothing. The tailor who receives the \$85 puts away 15 per cent of it and spends \$72.25—let us say to buy furniture. The furniture dealer saves 15 per cent and spends \$61.41. This process continues, as is indicated in the accompanying table, until in the end the entire original \$100 has been put aside as savings and articles to the total value of \$566 have been bought. The amount received by all the people in the aggregate was \$666, the value of the articles bought was \$566, and the savings were \$100. This corresponds closely to what happens in the case of the banking system. On the basis of \$100 added to reserves the total amount of deposits increases by \$666, total loans and investments by \$566, and reserves by \$100, the original amount received. The power of money to do business in a total amount several times as large as the sum used to transact the business is due to the fact that money passes from hand to hand and in so doing continues to pay for purchases.

There is one difference between bank transactions and commodity transactions. In the case of commodities the net result is final. The purchasers own the articles bought and their savings and have no further obligations. In the case of banks, the transactions result in loans and investments, which represent obligations due to the banks, and also in deposits, which represent bank liabilities to the public. Aside from the fact that banking transactions create two sets of

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obligations that cancel each other, while commodity transactions do not, the two cases are parallel. The multiplying capacity of money arises from the fact that it is universally acceptable and passes from hand to hand, each time paying for a transaction. In principle, the bank case does not differ from the commodity case. The arithmetic applicable to both cases is presented in the following table.

THE MULTIPLYING CAPACITY OF MONEY IN BANK OR COMMODITY
TRANSACTIONS

<i>Transaction</i>	<i>Amount received or deposited</i>	<i>Amount spent or lent</i>	<i>Amount set aside</i>
1	\$100.00	\$85.00	\$15.00
2	85.00	72.25	12.75
3	72.25	61.41	10.84
4	61.41	52.20	9.21
5	52.20	44.37	7.83
6	44.37	37.71	6.66
7	37.71	32.05	5.66
8	32.05	27.24	4.81
9	27.24	23.15	4.09
10	23.15	19.68	3.47
11	19.68	16.73	2.95
12	16.73	14.22	2.51
13	14.22	12.09	2.13
14	12.09	10.28	1.81
15	10.28	8.74	1.54
16	8.74	7.43	1.31
17	7.43	6.32	1.11
18	6.32	5.37	.95
19	5.37	4.56	.81
20	4.56	3.88	.68
Total for 20	\$640.80	\$544.68	\$95.12
Additional transactions ...	25.86	21.98	4.88
Grand total	\$666.66	\$566.66	\$100.00

This analysis has an important bearing on the question of the source of power to create money. It is sometimes maintained that, since the banking system can lend several times as much as it obtains in reserves, it creates money by a stroke

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of the pen. In the light of the preceding description it is clear that this statement is not correct in relation to any single bank. An individual bank can lend only such money as it acquires from its stockholders, its depositors, or the Federal Reserve. In the meantime the money, after it leaves the hands of the first bank, continues to do business as it passes from bank to bank or from person to person.

What is important to Federal Reserve operations is that the issuance of a given amount of what has been termed high-powered money by the Federal Reserve may create a volume of ordinary money that is several times as large as the amount issued, and that, on the other hand, Federal Reserve withdrawal of a given amount of high-powered money may result in liquidation of several times that amount of loans and investments and of deposits, that is, of ordinary money. It is this leverage which our banking procedure and law give to the Federal Reserve that results in its power to cause large changes in the total money supply by undertaking much smaller operations.

These are the principles on which our banking system operates. In practice an individual bank does not match one transaction against another. There is a continuous flow of funds into the bank from its depositors, who bring checks on other banks and currency to be added to their deposits. And there is a continuous outflow of funds as depositors write checks on their own accounts or cash checks drawn on other banks. The bank must constantly watch its deposits and its reserves to make sure that its reserves are sufficient to comply with legal requirements. The occasion to borrow from the Federal Reserve Bank usually arises, not from a desire to make an additional loan when the bank has no funds to spare, but from the need to replenish reserves which have declined below

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the required level as the net result of all the transactions that have gone through the bank.

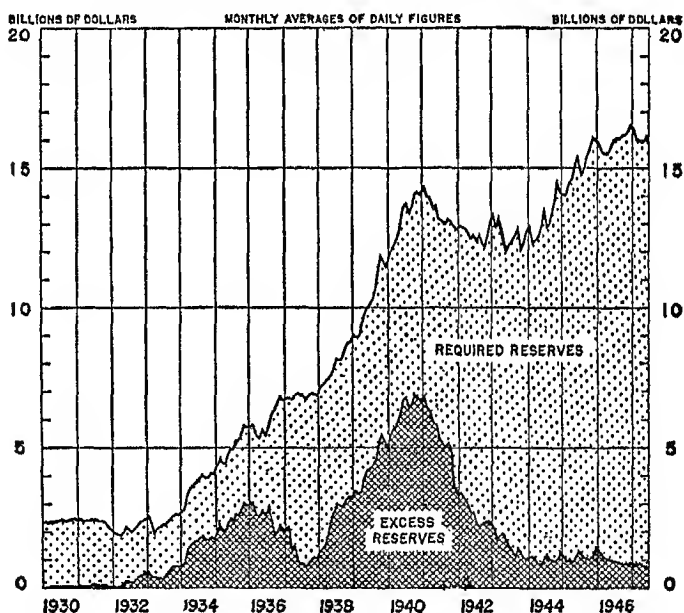
There is another point that needs to be clarified. While in the practical workings of the banking system the bulk of deposits originates in the granting of loans or the purchase of investments by banks, each individual banker knows from day-to-day experience that deposits are brought to him by his customers, and his ability to make loans and investments arises largely from the receipt of his depositors' money. This is another apparent banking paradox which causes much confusion. The fact is that deposits originating in loans and investments move from one bank to another in the course of business and seldom stay with the bank of origin. The series of transactions is as follows: when a banker makes a loan he credits the amount to the borrower's deposit account; the depositor writes checks against it in favor of various people who deposit them at their banks. Thus the lending banker is likely to retain or receive only a small portion of the deposits he creates, while a portion of the deposits created by other banks is brought to him by his customers. Hence both statements are, generally speaking, true; taking the banking system as a whole the bankers originate deposits by making loans and investments, but each individual banker's ability to lend or invest arises largely from deposits brought to him by his customers.

While a bank must watch its reserve balance with the Federal Reserve Bank to make sure that it is large enough, this does not mean that the balance remains unused. Under Federal Reserve rules reserve requirements are related to reserve balances maintained on the average over a period (a week for central-reserve and reserve city banks and half a month for other member banks). While maintaining his

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average reserve balance at or above the required minimum, a banker may make constant use of his account. Through it he can settle adverse balances with other banks through the clearings, and transfer funds to other cities. He uses his reserve account with the Federal Reserve Bank in much the same way that a depositor uses his checking account. But he must be careful to see that over the reserve period the account averages at or above the amount required in relation to his deposits.

MEMBER BANK RESERVE BALANCES



It has been stated that banks as business organizations endeavor to use all their available funds in profitable ways and keep as reserves only the minimum required by law. During most of the life of the Federal Reserve, member banks have used practically all their funds and have had practically no

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excess reserves. During the depression and the war period, however, conditions were different, as is brought out by the accompanying chart.

In the thirties there was a large movement of gold into the country which increased the reserves of member banks. At the same time there was only a limited demand for loans acceptable to banks. Consequently, the banks had a considerable volume of reserves in excess of requirements, or excess reserves. As credit expanded during and after the war, as currency demand increased rapidly, and as reserve requirements were increased in a manner described in the next chapter, excess reserves declined and at the present time [June, 1947] they once again constitute a relatively small proportion of total reserves.

CHAPTER III. GENERAL METHODS OF REGULATION

The principal Federal Reserve methods of general regulation of the volume of bank credit, or money, are discounts for member banks, purchases and sales of securities in the open market, and changes in reserve requirements.

It has been shown how changes in bank reserves influence the volume of bank credit or money. It is the purpose of this chapter to describe the three methods by which the Federal Reserve may influence the amount of bank reserves. These methods are discounts, open-market operations, and changes in reserve requirements.

Discounts

When a bank has lent or invested all of its available funds and has no reserves above legal requirements, it may obtain additional reserves by turning over a part of its portfolio to a Federal Reserve Bank. It may rediscount one or more of its customers' notes with a Reserve Bank, or it may give its own note to a Reserve Bank, using paper from its own holdings as collateral. The second procedure, known as an advance, differs from the first in form only, not in substance. In either case the Reserve Bank gives the member bank credit in its reserve account for the amount of the accommodation and thereby increases the legal reserves of the member bank. For this service the Reserve Bank charges interest at a rate which is known as the discount rate.

Originally the Federal Reserve Act prescribed rigid limitations on the kind of paper that was eligible for obtaining Fed-

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eral Reserve credit. All obligations of the United States government were eligible, and such commercial paper as represented loans of limited maturities to meet the current needs of commerce, industry, or agriculture. Loans made for investment or speculative purposes, that is, for carrying or trading in investment securities other than bonds and notes of the United States government, were not eligible. Experience showed, however, that these limitations were not in themselves effective in preventing too much lending in prosperous times, when eligible paper was plentiful, and that they hindered adequate assistance by the Federal Reserve to member banks in times of depression, when eligible paper was scarce. Consequently, the limitations were in effect removed by law and at present a Reserve Bank may make an advance to a member bank on its note secured by any collateral satisfactory to the Reserve Bank. In case the collateral is not of the kind described as eligible, however, the Reserve Bank must charge an extra $\frac{1}{2}$ per cent or more of interest.

When a member bank applies for accommodation, a Federal Reserve Bank is under no obligation to grant the credit; its decision is expected to rest on its judgment concerning the applicant's need and the use to be made of the additional funds. In the language of the law, "Each Federal Reserve Bank shall keep itself informed of the general character and amount of the loans and investments of its member banks with a view to ascertaining whether undue use is being made of bank credit for the speculative carrying of or trading in securities, real estate, or commodities, or for any other purpose inconsistent with the maintenance of sound credit conditions; and, in determining whether to grant or refuse advances, rediscounts or other credit accommodations, the Federal Reserve Bank shall give consideration to such information."

A member bank with satisfactory collateral can usually ob-

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tain the desired accommodation from a Federal Reserve Bank. The policy of the Federal Reserve in encouraging or discouraging borrowing by member banks expresses itself principally not in granting or refusing loans but in the rate charged for discounts and advances. Traditionally, when the Federal Reserve was of the opinion that expansion of the money supply would be desirable in the public interest, it set its discount rate at a low figure in relation to prevailing market rates. When it believed that further expansion would be harmful, it raised the discount rate. Hence the discount rate in effect at the Federal Reserve Banks, and particularly a change in this rate, has at times been an important indication of Federal Reserve policy; a high rate or an advance in rate indicated that there appeared to be danger of too much money and inflation; a low rate or a reduction in the rate indicated that in Federal Reserve opinion an increase in the supply of money would be in the public interest. The discount rate, therefore, not only has represented the cost of accommodation at the Federal Reserve Banks but has reflected Federal Reserve judgment as to whether there was too much, too little, or the right amount of money for doing the country's business.

In many periods since the establishment of the Federal Reserve System the discount rate has been the principal method of expressing Federal Reserve policy with respect to the money supply. For a number of more recent years, however, first as the result of an inflow of gold from abroad, which gave member banks additional reserves without recourse to borrowing from the Reserve Banks, and later as the result of wartime developments to be discussed later, discounts for member banks have been relatively small and the discount rate has been of relatively minor importance in Federal Reserve policy. Nevertheless, discounts and the discount rate can have an important bearing on the money supply. Their influence is

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increased by the customary reluctance of member banks to show indebtedness on their balance sheets.

Open-market Operations

Open-market operations as a method of influencing the money supply differ from discount operations primarily because they are undertaken at the initiative of the Federal Reserve, not at the initiative of the member banks. In the case of discounts the Federal Reserve can do no more than establish a discount rate until a member bank applies for credit accommodation. In the case of an open-market operation the Federal Reserve decides of its own accord that there is too little or too much money and proceeds to buy or sell in the open market—that is, from or to any one who is in the market—such obligations as it is permitted by law and chooses to acquire. Obligations of the United States government are the principal kind of paper thus bought or sold.

The process through which open-market operations by the Federal Reserve are reflected in the volume of member-bank reserves may be briefly described as follows: if the Federal Reserve decides to buy \$100 million of United States government securities, it notifies the dealers in such securities and they supply the securities to the Federal Reserve; in payment the dealer receives a Federal Reserve Bank's check. The dealer deposits the check with a member bank, which in turn deposits it with a Federal Reserve Bank. The result is that the Reserve Bank has added \$100 million to its holdings of United States government securities, and has added the same amount to the reserve deposit of some member bank. How this amount of additional reserves may result in a growth of about six times that amount in the money supply has been described in the preceding chapter.

If the Federal Reserve decides that it wishes to reduce the

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amount of member-bank reserves, and through them the money supply, it sells government securities to a dealer. In payment the dealer draws a check on a member bank in favor of a Federal Reserve Bank, and the Reserve Bank deducts the amount from the reserve deposit of the member bank. If the amount is \$100 million, the result is a decrease by that amount in Federal Reserve holdings of United States government securities and a corresponding decline in the member bank's reserves. As has been indicated in the preceding chapter, such a decrease in reserves, if not met in some other way, would necessitate a reduction of about six times that amount in member-bank deposits and hence in the money supply.

Member banks, however, would be reluctant to call enough customers' loans or sell enough securities to cause an extreme contraction in bank credit, and the Federal Reserve would hesitate to insist on a radical reduction in the money supply. What would probably happen is that member banks, finding themselves short of legally required reserves, would try to replenish them at least in part by obtaining discounts or advances from the Reserve Banks. The Reserve Banks would generally grant such loans, at the discount rate. As a result, the Federal Reserve would hold a smaller amount of government securities and a larger volume of discounts than before, while member banks would have a smaller volume of deposits (because of the dealer's check) and would be in debt to the Federal Reserve. For the sake of simplicity this leaves out of account the reduction in required reserves that would result from the decrease in member-bank deposits.

In this connection the member banks' reluctance to show indebtedness, which has been mentioned before, has an important bearing on the effects of open-market operations. If purchases by the Federal Reserve are made at a time when member banks are substantially in debt to the Federal Re-

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serve, it is probable that member banks will use at least part of the reserves they acquire as the result of the purchases to reduce their debt. On the other hand, as has already been stated, the loss of member-bank reserves resulting from sales by the Federal Reserve in the open market will probably be made up at least in part by additional borrowing from the Federal Reserve.

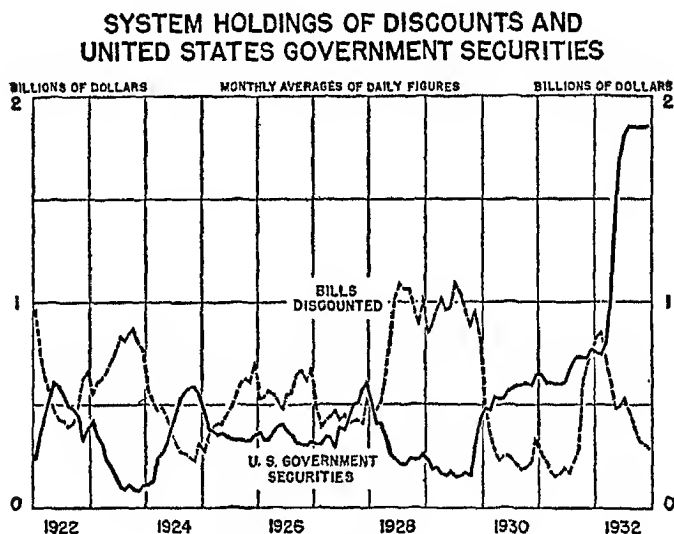
Federal Reserve action in the open market, therefore, is not likely to result in a rapid multiple expansion or contraction of member-bank deposits. Instead, under ordinary conditions, it is likely to result in a decline or an increase in member-bank indebtedness, with no immediate substantial change in member-bank reserves. But this does not mean that the action would have no effect on the money supply. When member banks are out of debt to the Federal Reserve they are much more willing to make loans and investments and thus to increase their deposits; when they are heavily in debt they not only are less willing to make additional loans but are inclined to reduce the volume of their loans and investments. They may not call loans, but they will probably be less willing to make new loans or to renew old ones as they come due. And the Federal Reserve is in a position to encourage this process by raising the discount rate.

Open-market operations, therefore, work more gently than would be the case if additions to or subtractions from member-bank reserves through Federal Reserve purchases or sales led to an immediate multiple expansion or contraction of bank deposits. They are nevertheless a powerful influence on the money supply because, by decreasing (or increasing) member-bank indebtedness, they tend to encourage (or discourage) expansion of deposits at member banks.

The accompanying chart shows how increases in Federal Reserve holdings of United States government obligations

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(that is, open-market purchases) in the past have been accompanied by declines in holdings of discounts, and, on the other hand, how decreases in security holdings (that is, open-market sales) have been reflected in increased holdings of paper discounted for member banks. In the past, the Federal Reserve has tended to make complementary use of these two instruments of credit policy.



Brief reference should be made to another element in Federal Reserve credit which has not been important in recent years but was of considerable moment in the past, namely, dealings in bankers' acceptances. A banker's acceptance is a draft, usually drawn by a seller of goods against the buyer, which is "accepted" by a bank so that the bank becomes primarily liable on the instrument and lends its own credit to that of the buyer. In this country most acceptances arise out of exports or imports. A seller of cotton, for example, may draw a draft payable in ninety days on a buyer in Liverpool.

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The buyer may have an arrangement with a bank in New York whereby the bank will accept the seller's draft on the buyer, thus enabling the seller to negotiate the draft, and the buyer will reimburse the accepting bank upon maturity of the instrument. These instruments, known as acceptances or bills, bear three signatures, those of the seller, the buyer, and the accepting bank. They usually are secured by goods in the process of shipment, and may be accompanied by shipping documents. They are considered to be paper of the highest quality.

The Federal Reserve Banks generally stand ready to buy acceptances at a slight discount, that is, at a discount rate slightly higher than the rate prevailing in the open market. Such purchases are a form of credit expansion intermediate between discounts for member banks and open-market purchases. They are similar to discounts in that the initiative for their sale to the Reserve Banks comes from member banks or dealers, the Reserve Banks merely announcing the rate at which they are willing to buy. On the other hand, the purchase of acceptances is similar to open-market purchases in two respects: in both operations the Federal Reserve will buy not only from member banks but also from others, and neither operation places the seller in debt. There is no indebtedness added to the condition report of a member bank when it sells an acceptance to a Reserve Bank. The member bank has sold a bill, endorsed by it, which is reported merely as a contingent liability. Consequently purchases of acceptances by the Reserve Banks do not have the effect of borrowing by member banks; they do not put the banks in debt and therefore do not make them less willing to extend credit to their customers.

In recent years the volume of acceptances has become relatively small and the Reserve Banks have purchased them only

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in minor amounts. Their place in the financial system has been taken by three-month Treasury bills. These bills are issued weekly by the United States Treasury, usually at rates determined by competitive bids. During the war the Federal Reserve adopted the policy of purchasing all Treasury bills offered at a fixed rate of $\frac{3}{8}$ per cent, and of allowing banks an option to repurchase bills sold at the same rate. Member banks, particularly those in financial centers, tended to treat their Treasury-bill holdings as equivalents of cash, selling and repurchasing them to adjust their reserve positions in response to current movements of funds. In the summer of 1947 the wartime policy of the Federal Reserve with regard to Treasury bills was discontinued and bill rates were once more permitted to find higher levels in response to conditions in the market.

Source of Federal Reserve Lending Power

As has just been described, when the Federal Reserve makes a discount for a member bank or buys a United States government security in the market, it gives credit for the proceeds to a member bank in its reserve account. The member bank may use such additions as reserves for its deposits or, if it happens to be in need of additional currency to meet a public demand, it may withdraw them in Federal Reserve notes or other currency.

The question arises as to the source and the limits of the Federal Reserve's lending power. The limits are set by the legal requirement that Federal Reserve Banks must hold a 25 per cent reserve in gold certificates against their notes in circulation and their deposits. Their combined liabilities for notes and deposits consequently must not exceed four times their gold-certificate holdings. Only in emergencies can this

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requirement be suspended and only for short periods and at penalty rates.

The source of Federal Reserve lending power is in the System's authority to issue Federal Reserve notes and to create bank reserves in an amount exceeding the Federal Reserve Banks' holdings of gold certificates. At present the authorized ratio is four to one. The issue of notes is an act of creating money. It is for this reason that, as will be explained later, notes are issued to the Federal Reserve Banks by the Federal Reserve Agent, a representative of the Federal government. When a Federal Reserve Bank gives a member bank credit in its reserve account for a discount, the basis is laid for the creation of additional money through loans and investments by the banking system. Member banks also give deposit credit to customers who have obtained loans, but Federal Reserve transactions differ from member-bank operations in two important respects: (1) member banks are required by law to keep deposits with the Reserve Banks, while depositors of member banks are legally free to withdraw their deposits at any time, and (2) the Reserve Banks can issue notes, while the member banks cannot.

The answer to our question, therefore, is that the lending power of the Federal Reserve Banks arises from the authority given to them by law to create money, and the limits of this power are set by the requirement that their liabilities on notes and deposits must not be in excess of four times their holdings of gold certificates.

Changes in Reserve Requirements

Discounts and open-market operations by the Federal Reserve Banks, as has been seen, result in changes in the volume of member-bank reserves. Changes in reserve requirements,

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which are the third method of regulating the money supply, have no direct influence on the total of member-bank reserves but affect the amount of reserves that member banks must hold as deposits with a Federal Reserve Bank, and consequently the amount available for lending or investing. For example, when the reserve requirement is 15 per cent, a member bank must keep in its reserve account with a Federal Reserve Bank \$15 out of every \$100 of its own deposits, and it has \$85 left to lend or invest. If reserve requirements were raised to 20 per cent, the member bank would have to keep \$20 uninvested and have only \$80 to lend, and if requirements were reduced to 10 per cent, it would need to keep only \$10 uninvested and would have \$90 to lend or invest. Thus a change in reserve requirements changes the rules under which member banks must operate.

These are the effects of changes in reserve requirements on an individual member bank, but in addition they change the rate at which multiple expansion will operate. On a 15 per cent reserve requirement \$100 of reserves will support bank deposits of \$666, as was shown in the table on page 111. On a 20 per cent basis \$100 will support \$500 of deposits, and on a 10 per cent basis it will support \$1,000 of deposits. It will be seen that changes in reserve requirements are an extremely powerful instrument for reaching the volume of money through bank deposits.

Originally the Federal Reserve Act prescribed certain reserve requirements and made no provision for changes by the Federal Reserve. The percentages in effect on June 21, 1917, were:

Time deposits, all member banks	3
Demand deposits:	
Central-reserve city banks	13
Reserve city banks	10
Country banks	7

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Central-reserve cities now are New York and Chicago; in June, 1947, there were about sixty reserve cities, including most of the larger cities of the country; banks outside of these cities are known for purposes of determining reserve requirements as country banks.

Banking legislation empowering the Federal Reserve to change reserve requirements was enacted first in 1933 and has not been changed extensively since it was revised in 1935. As the law stands today [June, 1947] the Federal Reserve has authority to increase reserve requirements to twice the ratios stated in the law and subsequently to reduce them to any level that is not below these ratios. The range of discretion and the requirements in effect at present are as follows (in percentages):

	<i>Range</i>	<i>In effect, June, 1947</i>
Time deposits, all member banks	3 to 6	6
Demand deposits:		
Central-reserve city banks	13 to 26	20
Reserve city banks	10 to 20	20
Country banks	7 to 14	14

Changes in reserve requirements may be made applicable to any or all of the groups of banks shown above but must be uniform for all banks within a group.

Federal Reserve Bank lending power is in no way affected by changes in member-bank reserve requirements, even though they may change the demand for Reserve Bank credit. They are reflected in changes in the distribution of Federal Reserve Bank deposits between the required and the excess reserves of member banks.

Because changes in reserve requirements are a very powerful instrument they are used only on infrequent occasions.

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When changes are made they apply to all the banks in a group, regardless of the reserve position of the individual banks. As a matter of fact, even when banks in the aggregate have a large volume of excess reserves, there are sure to be some banks that have none. An increase in requirements makes it necessary for such banks to acquire additional reserves either by reducing their loans and investments or by borrowing. Because of this effect on individual banks, increases in reserve requirements have been made only at times when the total of excess reserves was so large that such deficiencies as resulted in individual cases were small. For example, when requirements were raised by 50 per cent in August, 1936, member banks as a group had excess reserves of more than \$3.0 billion; after the increase in requirements they still had an excess of over \$1.8 billion. In the spring of 1937, before the first of a series of increases in requirements, member banks had more than \$2.0 billion of excess reserves, and they still had about \$0.9 billion after requirements had been increased to the maximum permitted by law.

Action on reserve requirements is not adapted to day-to-day changes in banking and monetary conditions. It expresses itself in changes in percentages, which generally result in large aggregate inroads on the available reserves of member banks. Frequent changes in requirements by small percentual amounts would be disturbing to member banks and would complicate their bookkeeping and their customary way of doing business. For these reasons this method of influencing the volume of available bank reserves and the supply of money is usually employed only for the purpose of adjusting the banking structure to large-scale changes in the country's supply of monetary reserves. It is not employed to make frequent delicate adjustments to current changes in the supply

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of money. For this purpose the Federal Reserve depends principally on discount and open-market operations.

NOTE: By action of Congress in the summer of 1948 the range of permissible reserve requirements was modified on a temporary basis to expire on June 30, 1949, and by action of the Board of Governors certain changes in the requirements were made as of October, 1948. The table on the preceding page would now look as follows:

<i>Reserve requirements</i>	<i>Range</i>	<i>In effect October, 1948</i>
Time deposits, all member banks	3 to 7½	7½
Demand deposits:		
Central-reserve city banks	13 to 30	26
Reserve city banks	10 to 24	22
Country banks	7 to 18	16

CHAPTER IV. SELECTIVE METHODS OF REGULATION

In addition to general methods of regulation the Federal Reserve has special powers to regulate the terms on which transactions in stock-market securities are financed and for a period during and immediately after the war it had authority to prescribe terms on which consumer credit could be extended.

The instruments of credit policy so far discussed, discounts, open-market operations, and changes in reserve requirements, relate to the volume and cost of bank credit in general, without regard to the particular field of enterprise or economic activity in which the credit is used. Thus they are distinct from the two instruments of control, now to be discussed, which are particular or selective. These two are applicable to stock-market credit and consumer credit, respectively. Selective instruments of Federal Reserve regulation do not, as do general regulations, approach the problem through influencing bank reserves. Instead they prescribe the terms on which certain kinds of loans may be made, or credits granted, regardless of whether the banks have abundant or scanty reserves. These methods are supplementary to methods of general regulation, and their merit is that they make it possible to restrain the flow of money into certain fields at times when conditions in the economy as a whole are such as to make general restraints on the growth in the volume of money undesirable. For example, an unhealthy stock-market speculation may develop and call for restraint at a time when credit for production and trade is not expanding and when the ap-

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plication of general instruments of regulation might do harm to the country's over-all economic activity. At such a time the Federal Reserve could decide to employ its power to regulate margin requirements.

Margin Requirements

The Federal Reserve authorities have long been enjoined by law to restrain the use of bank credit for speculation; they are to keep themselves informed, in the language of the law, as to "whether undue use is being made of bank credit for the speculative carrying of or trading in securities, real estate, or commodities," and they are authorized to take certain restrictive action to prevent undue use of credit in these fields. Since 1934, the Board of Governors of the Federal Reserve System has also had the specific power to curb the excessive use of credit for the purpose of purchasing or carrying securities by limiting the amount which holders of securities may borrow upon them for this purpose either from banks or from securities brokers and dealers.

This amount is always less than the current market value of the securities, and the difference between the two is called the margin. Thus if a loan of \$7,500 is secured by stock worth \$10,000, the margin is \$2,500, or 25 per cent of the value of the stock. The Board's regulations may be thought of as prescribing either minimum margin requirements or maximum loan values; for the greater the margin required, the less the amount that can be borrowed.

The Board's regulations apply to the margin that must be required at the time the security is purchased. If the collateral security for the indebtedness subsequently declines in value, the regulations do not make it necessary for the borrower either to put up additional collateral or to reduce the indebtedness. The limitations apply only to credits ob-

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tained for the purpose of buying or carrying securities registered on national stock exchanges;¹ they do not apply to any loan for commercial purposes, even though the loan be secured by stocks. In any case the bank or broker making a loan may require additional collateral if he deems it necessary.

For several years before the war, the Board's regulations required margins of 40 per cent, but during the war requirements were raised first to 50 per cent, then to 75 per cent, and in 1946 to 100 per cent. When the margin required was 40 per cent, one could borrow for the designated purpose 60 per cent of the value of his collateral security; when it was 50 per cent, he could borrow 50 per cent; when it was 75 per cent, he could borrow only 25 per cent; and when it was 100 per cent, he could borrow nothing. To require a margin of 100 per cent was in effect to forbid loans for the purpose in question. The reason for so drastic a requirement was that inflationary pressures were very strong and any growth whatever in stock-market credit would increase them. The 100 per cent requirement was in effect from January, 1946, to February, 1947, when it was reduced to 75 per cent, making it possible for banks and brokers to lend 25 per cent of the value of the collateral.

The control effected by margin requirements, though bearing directly on the lender, puts restraint upon the borrower and dampens demand. It can be used accordingly to keep down the volume of stock-market credit even though lenders are abundantly able and eager to lend. The extent to which margin requirements may restrain borrowers can be illustrated very simply. Before the regulation was authorized, a person

¹ The provisions of the law make some distinctions between brokers or dealers and banks; brokers or dealers cannot extend credit on unregistered securities except temporarily in connection with cash transactions; banks are not restricted by margin requirements in making loans on securities other than stocks.

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having, say, \$1,000 to put in the market could arrange with a broker, if the broker was willing to accept the risk, for the purchase of 100 shares of stock at \$100 a share—that is, \$10,000 worth—the stock being held by the broker as collateral for the \$9,000 he was lending and giving him a margin of 10 per cent. If the stock rose or fell \$5 a share, the borrower would have a profit or loss of \$500. Customary margins in preregulation days ranged from 10 to 25 per cent. Under the present requirement of a 75 per cent margin, the buyer could arrange to purchase only about 13 shares at \$100 each, and a rise or fall of \$5 a share would bring him a profit or loss of only \$65. It is obvious that high margin requirements greatly reduce the gains or losses to be realized by buying with borrowed funds, and cut down the amount of credit which can be obtained for this purpose. Furthermore, with high margins the pressure of forced selling to bolster accounts during market declines is reduced.

Another effect of high margin requirements is in restricting the amount of pyramiding that can take place in a rising market, that is, the extent to which traders may add to their holdings, when the market is rising, without putting up additional money or additional securities but merely by borrowing against the additional market value of securities already held in their accounts. In case 100 shares of stock purchased for \$10,000, for example, should rise in value to \$15,000, the increase of \$5,000 would suffice, under a 10 per cent margin requirement, not only to margin the increase in value of the original 100 shares but in addition to margin an additional purchase of 300 shares. Under a 50 per cent margin requirement, however, the increase of \$5,000 market value would suffice, after allowing for the increased margin of \$2,500 on the original 100 shares, to permit the purchase of only about 33 shares. Restriction of pyramiding is an important restraint on rising

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stock prices as well as on the growth of credit employed in the stock market.

By the control of margin requirements excessive use of credit in the stock market, which has caused serious disturbances to the economy in the past, has been placed under control. The danger of a stock-market boom financed by credit and followed inevitably by a disastrous collapse has been largely eliminated. A boom and a collapse in the stock market is still possible—on a cash basis, but without the use of credit it is not likely to assume the proportions it had in the past, as for example in 1929. At that time credit extended by brokers alone had increased to at least \$10 billion, a peak from which it fell to \$750 million by the middle of 1932. This rise and fall in stock-exchange loans was accompanied by an advance in prices of common stocks to an index number of 238 in the autumn of 1929, followed by a drop to 36 in the middle of 1932. This boom and bust in the stock market caused a great deal of damage and contributed to the development of depression in the 1930's. With the inauguration of control of credit going into the stock market the likelihood of an episode like the one that culminated in 1929 has become remote.

Aside from having to do with a specific use of credit, the authority with respect to security loans differs from other Federal Reserve powers in reaching outside the Federal Reserve System to banks that are not members of the System and to brokers and dealers in securities. It is closely related, however, to other regulatory powers of the Federal Reserve authorities, because the use of credit for purchasing or carrying securities has an important bearing upon its use for business purposes in general.

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Consumer Credit

Temporary control of consumer credit was established in 1941 by Executive order of the President under authority of an act of Congress (enacted October 6, 1917, and subsequently amended) giving him certain emergency powers. The purpose was to curb the use of credit for the purchase of automobiles, electric refrigerators, radios, washing machines, vacuum cleaners, household furniture, and other consumers' goods and services. Consumers' goods and services were becoming scarce because the equipment, materials, and labor required for their production were being transferred to the war effort. At the same time, since employment was general and payrolls were large, the purchasing power of consumers was increasing. In this situation, with decreased supply and increased demand, there was every reason for expecting prices to rise exorbitantly. The President, accordingly, under authority of his emergency powers, instructed the Federal Reserve authorities to regulate the use of consumer credit so that it would not be used to accentuate the demand.

In compliance with the Executive Order, the Board of Governors issued Regulation W, prescribing terms upon which credit might be granted. At the outset it applied only to installment credit, including both installment sales and installment loans, in which form the great bulk of consumer credit was being generated.

The restraints imposed by Regulation W on installment credit were twofold: they limited the amount of credit that might be granted for the purchase of any article listed in the regulation, and they limited the time that might be agreed upon for repaying the obligation. Installment loans not related to the specifically listed articles were subject only to limitation on the time of repayment. Thus, for example, a person buying an automobile had to make a down payment

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and information about the procedure to be followed in extending consumer credit, their records were subject to inspection, and they could be penalized for violating the regulation.

In the two-year period immediately following the war, regulation of consumer credit was continued, though some of the terms were relaxed and the scope of the regulation was contracted to about what it was at the outset. The reason for continuing it was that the supply of goods was at the time altogether inadequate relative to the demand, in which circumstances the danger of an inflationary rise in prices was extreme. Restraint upon the use of credit in purchasing scarce articles was intended to lessen the pressure for a rise in prices and help to restrain it. In addition, fixing minimum down payments for important consumers' durables and the maximum length of contract for consumer installment financing in general tended to cause competitive business forces to take the direction of lowering prices instead of keeping them up by means of offering easier and easier credit terms.

One reason why consumer buying on installments was subjected to special regulation is that variation in the volume of such buying has a disturbing influence on business stability. Purchases on an installment basis are likely to be large at a time of general prosperity when the demand for goods is pressing on the supply and consequently prices are likely to rise. At such a time installment purchases are likely to increase still further a demand for goods that is already larger than can be easily supplied. On the other hand, at a time of depression and unemployment, when the demand for goods is low relative to the supply and is declining, the necessity for many purchasers on installment to meet their payments tends to reduce still further the amount of money available to consumers for current purchases. This tends to intensify

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the depression. It is believed by many that regulation of installment purchases, prescribing stiffer terms in a boom period and permitting easier terms in a depression, would tend to reduce somewhat the swings from prosperity to depression and would therefore support the main purpose of Federal Reserve policy.

Resting as it did on an Executive order of the President and not on explicit legislation by Congress, the regulation of consumer credit by the Federal Reserve authorities was a temporary form of credit control. It has been terminated as of November 1, 1947, after having been in effect a little over six years. Such a control could be made permanent only in case Congress should decide to give it that status by specific statutory authorization.

Selective instruments of national credit policy, though used in their modern form for less than fifteen years, have been developed far enough with respect to stock-market credit and consumer credit to show that such instruments can be a useful complement to the older and more general instruments—discount rates, open-market operations, and reserve requirements. They are flexible in themselves and can help to make credit policy in general more flexible. Their distinguishing characteristics are that they are applicable to parts of the economy instead of to the economy as a whole and that they can be used to restrain the demand for credit without operating, as general instruments do, through the stiffening of money rates.

NOTE: By act of Congress on August 16, 1948, the Board of Governors was given authority once more to regulate consumer credit on the same basis as before. This authority, however, was granted only until June 30, 1949.

CHAPTER VI. RELATION OF FEDERAL RESERVE TO CURRENCY

The Federal Reserve pays out currency in response to public needs and absorbs redundant currency. Its operations result in making the entire currency supply elastic.

An important purpose of the establishment of the Federal Reserve Banks in 1914 was to provide an elastic currency. Prior to that time the currency had consisted principally of Treasury notes secured by gold or silver and of national bank notes which had to be secured by specified kinds of United States government obligations that were extremely limited in amount. As a consequence, additional paper money could not be easily supplied when the nation's business so required and currency would become hard to get and command a premium. Currency shortages, together with other related developments, caused several financial panics. It was one of the tasks of the Federal Reserve to prevent such panics by providing a kind of currency that would respond in volume to the needs of the country. The Federal Reserve note is such a currency.

Federal Reserve notes are paid out by the twelve Federal Reserve Banks to member banks on request and are charged to their reserve accounts. Any Federal Reserve Bank can obtain the notes from its Federal Reserve Agent, a representative of the government, upon pledging gold certificates, so-called eligible paper, or United States government obligations. Consequently, whenever the public needs more currency, member banks can obtain it from a Federal Reserve Bank, which in turn can secure it from a Federal Reserve Agent on

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the pledge of practically any Reserve Bank asset. The only limitation is that the Reserve Banks must have, in their own hands or pledged with a Federal Reserve Agent as part of the collateral for Federal Reserve notes, gold certificates amounting to not less than 25 per cent of the Federal Reserve notes in circulation, in addition to having in their own possession gold certificates amounting to not less than 25 per cent of their deposit liabilities. (Prior to 1945 the required percentage was 40 for notes and 35 for deposits.) Under this system the volume of currency increases when the public's needs become larger, and declines when they become smaller. In the latter case member banks, on receipt of currency from their depositors, redeposit it with the Federal Reserve Banks, which turn it over to their Federal Reserve Agents and redeem the assets previously pledged as collateral for the notes.

As has been stated earlier, Federal Reserve notes constitute about seven-eighths of all the currency in circulation. The other kinds of currency are United States notes (a remnant of Civil War financing), various issues of paper money in process of retirement, silver certificates, silver coin, nickels, and cents. Federal Reserve notes are not issued in denominations smaller than \$5, and so all of the \$1 and \$2 bills (as well as some bills of larger denominations) are in other forms of paper money, chiefly silver certificates and United States notes. At the end of June, 1947, the total amount of currency in circulation was \$28.3 billion, of which \$24.0 billion were Federal Reserve notes. Of the remainder the largest amount consisted of silver certificates. All of the kinds of currency in circulation in the United States are legal tender and the public makes no distinction among them. It may be said that the Federal Reserve has endowed all forms of currency with elasticity since they are all receivable at the Federal Reserve Banks whenever the public has more currency than it needs,

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and they may all be paid out by these Banks when demand for currency increases. Therefore, in the subsequent discussion reference will be made to the total of currency in circulation rather than to any particular kind.

It has already been stated that the amount of currency in circulation changes in response to changes in the public's needs. These changes are substantial and frequent. The demand varies for different days of the week, for different days of the month, and for different seasons. It increases before holidays such as Memorial Day, Independence Day, and Labor Day, when many people take trips and need more ready cash. There is an extraordinary increase in the demand before Christmas, when cash is used for Christmas shopping or as gifts. After the holidays, the currency is promptly deposited in the banks by the merchants, hotel keepers, and others with whom it has been spent, and the banks send it to the Federal Reserve Banks.

In addition to seasonal changes in the demand for currency, there are changes that reflect variations in business conditions. When business is good, the demand for currency increases, and when business declines, the demand also declines. While most payments in this country are made by check, some types of payments are made principally in currency. The most important of these are payrolls and retail trade, and statistics show that the amount of currency in circulation fluctuates in response to changes in the volume of these two kinds of payments. There have been occasions, as in 1930-1932, when the demand for currency increased because numerous bank failures caused people to withdraw their deposits from other banks. During the war the amount of currency in circulation increased greatly in response to a variety of influences: the growth of payrolls, retail trade, and travel; removal of many people from their usual places of

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residence; payments to members of the armed forces; larger incomes of people not in the habit of using banks; and, no doubt, hoarding of currency for various reasons. The demand for additional currency subsided after the war, but the volume in circulation is still extraordinarily large.

From the point of view of the Federal Reserve and member banks, changes in the demand for currency have a special significance that arises out of our system of reserve requirements. As has been explained, reserve requirements of member banks are expressed as percentages of their deposits. If the public borrows, say, \$1,000 from a bank and leaves it on deposit to be transferred from bank to bank by check, the amount of reserves that the banking system must hold increases by only \$150. If, however, the public wishes to withdraw the proceeds of the loan in currency, the member bank must obtain the currency from a Reserve Bank, which will charge the full amount withdrawn to the member bank's reserve account. Consequently, the reserves of the bank—and of the banking system as a whole—will diminish by the full \$1,000.

If the banking system had no excess reserves, it would have to obtain additional reserves. In either case, the Federal Reserve could make it unnecessary for the member banks to borrow from the Reserve Banks, if it thought it desirable to do so, by buying an equivalent amount of government securities in the open market. Whichever procedure was followed, the demand for Federal Reserve credit and Reserve Bank holdings of discounts and securities would increase; but the increase would be \$150 in the case of the demand for \$1,000 of deposits and \$1,000 in the case of demand for an equal amount of currency. Because the increase in the demand for Federal Reserve credit is so much greater when the public withdraws its funds from banks in currency than when it leaves them on deposit, the volume of discounts and

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securities held by the Federal Reserve Banks is greatly influenced by changes in the demand for currency.

One effect of the fact that a demand for currency results in a greater demand for Federal Reserve credit than does a similar demand for deposits is that the Federal Reserve Banks' need for reserves to meet their own requirements increases much more when currency is flowing out to the public than when bank-credit expansion takes the form of a growth in deposits. The Reserve Banks are required to hold the same ratio of reserves in gold certificates against their Federal Reserve notes in circulation and against their deposits (25 per cent), but when the public demand is for \$1,000 in currency, the Federal Reserve Banks pay out that amount of Federal Reserve notes—and their reserve requirements increase by \$250. If, however, the public's demand is for \$1,000 in deposits, member-bank reserves, which are the deposits against which the Reserve Banks must hold reserves, increase by only \$150 and the reserves needed by the Reserve Banks by only \$37.50 (25 per cent of \$150). Consequently, an increase in currency ties up more than six times as much of the Reserve Banks' reserves as does an identical increase in bank deposits.

It is principally because of the great growth in currency in circulation during the war that the Federal Reserve Banks' ratio of reserves to combined note and deposit liabilities declined to a point where Congress deemed it wise to reduce the reserve requirement of the Reserve Banks from 40 per cent for Federal Reserve notes and 35 per cent for deposits to 25 per cent for each kind of liability. The amount of reserves that the Reserve Banks actually hold, however, is always considerably larger than the minimum required by law. This is because the Reserve Banks are not operated for the purpose of making a profit and consequently do not extend additional credit simply because they have enough reserves

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to enable them to do so. The volume of Federal Reserve credit to be extended is decided on the basis of demand of the public for currency and bank deposits and of the policies pursued by the Federal Reserve to encourage or discourage this demand. As has already been stated, these policies are determined by considerations of the public interest rather than by the availability of unused reserves at the Federal Reserve Banks.

CHAPTER VII. RELATION OF FEDERAL RESERVE TO GOLD

Gold and Federal Reserve credit are the principal sources of member-bank reserves. Consequently, gold movements are reflected in changes in the demand for Federal Reserve credit. Gold-certificate holdings of the Federal Reserve Banks set the limits of Federal Reserve credit expansion.

There is a dual relationship between the Federal Reserve and gold. It may be said that gold is both the basis and the principal competitor of Federal Reserve Bank credit. It is the basis of Reserve Bank credit because the power of the Reserve Banks to create money either through adding to their deposits or issuing Federal Reserve notes is limited by the requirement of a 25 per cent reserve in gold certificates against both kinds of liabilities. Consequently, the total of Federal Reserve notes and deposits must not exceed four times the amount of gold certificates held by the Reserve Banks. Thus gold sets the limits of Reserve Bank credit expansion.

Gold is a competitor of Federal Reserve Bank credit for the reason that, when the United States acquires more monetary gold, additional reserves become available to the member banks without their having to resort to a Reserve Bank for credit. Except to the extent that there is a more than temporary decline in the amount of currency in circulation, gold and Reserve Bank credit are by far the most important sources of member-bank reserves. The more gold comes to the country from abroad or from domestic mines, the less de-

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mand there is for Reserve Bank credit. These relationships require more detailed explanation and description.

It should be mentioned first that what the Federal Reserve Banks hold is not gold but gold certificates. By the terms of the Gold Reserve Act of 1934 all the monetary gold in the country, that is, all the gold that is not used in industry and the arts, must be turned over to the Treasury, which pays \$35 an ounce for it. The Treasury pays for the gold by check and issues an equivalent amount of gold certificates to the Reserve Banks. The Treasury must hold gold at the rate of \$35 an ounce for all the gold certificates it issues.¹ Consequently, while the title to the gold is in the government, the greater part of it is held as cover for the gold certificates in the possession of the Reserve Banks and may not be used for any other purpose. The Reserve Banks are the only institutions permitted by law to hold gold certificates, which are no longer permitted to circulate. Except for a small amount that has not been turned in and that may have been lost, destroyed, or sent abroad, gold certificates are used exclusively as reserves of the Federal Reserve Banks. In practice the Reserve Banks hold only a relatively small amount of the certificates; most of them are represented by a credit in a gold-certificate account on the books of the Treasury. This serves the same purpose and saves the unnecessary expense of printing and shipping the notes.

At the end of June, 1947, the Treasury held gold in the amount of \$21,266 million; of this amount \$20,087 million was cover for gold certificates, \$156 million was held as the statutory reserve against United States notes, and the remainder, \$1,024 million, was in the general fund of the Treasury.

¹ The amount of gold that the Treasury must hold as cover for each dollar of gold certificates can be changed only by an act of Congress.

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Only the gold in the general fund is at the free disposal of the Treasury.¹

The process by which gold produced in the United States or imported from abroad reaches the Treasury and is reflected in additions to the reserves of member banks and Federal Reserve Banks is not difficult to follow. The gold is taken to an assay office of the United States Treasury, which pays for it by check. The seller of the gold deposits this check with a member bank, which in turn deposits it with a Reserve Bank, where it is added to the reserve balance of the member bank and charged to the account of the United States Treasury. The Treasury replenishes its account by issuing an equivalent amount of gold certificates to the Reserve Bank. Assume that the gold is worth \$1 million. Then the gold stock of the Treasury, the gold-certificate holdings of the Reserve Bank, the reserve balance of the member bank, and the bank deposit of the seller of the gold will all increase by \$1 million.

On the other hand, if a member bank has the required license from the Treasury to export \$1 million in gold, the member bank draws a check for \$1 million on its reserve deposit, the Federal Reserve Bank turns over \$1 million of gold certificates to the Treasury in exchange for gold, and the Treasury furnishes the gold to the member bank. The result is that gold holdings of the Treasury, gold-certificate holdings of the Reserve Bank, and the reserve balance of the member bank have all been reduced by \$1 million. It should

¹ When gold was revalued from \$20.67 to \$35.00 an ounce in 1934, there accrued to the Treasury \$2.8 billion, of which \$2 billion was placed in a Stabilization Fund. Most of the remainder was used indirectly to retire national bank notes. In 1947 part of the \$2 billion in the Stabilization Fund was used to pay the gold portion of the United States subscription to the International Monetary Fund, and the balance was added to Treasury cash.

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be mentioned that gold movements in recent years have been handled almost exclusively by governments and central banks, so that gold transactions proceed through official channels. Sometimes gold transactions with foreign countries are effected without a physical movement of gold into or out of this country. A foreign central bank may purchase gold in the United States and have it "earmarked," or segregated, for its account at the Federal Reserve Bank of New York, or it may sell some of its earmarked gold to the United States Treasury. Movements in and out of earmarked accounts have the same effect on our banking system as exports and imports of gold. Earmarked gold belongs to foreign authorities and is not a part of the monetary gold stock of the United States.

These processes are essentially the same as they were when gold itself was held by the Federal Reserve Banks and when circulation of gold coins was permitted. The only difference is that the title to the gold is in the Treasury and the Reserve Banks hold claims on it in the form of gold certificates. The effects of gold movements on the reserves of Federal Reserve Banks and member banks and on bank credit and the total money supply are unchanged by the altered procedure.

It has been shown that gold imports (or exports) increase (or decrease) the reserves of Federal Reserve Banks and, therefore, their ability to issue notes and create deposits. The effect of gold movements on member-bank reserves is the same as that of Federal Reserve discount or open-market operations. When gold comes in, it increases member-bank reserves in the same way as would an equivalent amount of discounts or open-market purchases by the Reserve Banks; when gold goes out, it diminishes member-bank reserves in the same way as would the paying off of a discount by a member bank or the sale of a security by a Reserve Bank. It is for this reason that the demand for Reserve Bank credit diminishes when gold

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comes in and increases when gold goes out. Sometimes the Federal Reserve makes loans on gold to foreign authorities and this has the same effect on credit conditions in this country as any other advance by a Reserve Bank.

Movements of gold from one country to another are the ultimate means by which international balances are settled. On one side of the balance sheet are all the goods, services, and securities the United States, for example, has sold to foreigners, and on the other side are all the goods, services, and securities the United States has bought from foreigners. There are other items that enter into one or both sides of the balance sheet such as expenditures of tourists abroad, remittances by immigrants to their mother countries, and gifts to foreign countries. If, after all of these items have been taken into account, there is still a balance due to the United States from abroad, it can be met by foreigners broadly in one of two ways: by borrowing in the American market, or by sending gold to the United States. Shipment of gold is usually the last resort employed to cover the balance. In recent years, owing to the world-wide demand for American goods and securities and the scarcity of exportable commodities abroad, the balance due to the United States by foreign countries has been very large. It has been covered by public and private loans to foreign countries and by large imports of gold. These gold imports have been an important factor in credit conditions in the United States.

Disregarding currency movements in and out of the Federal Reserve Banks, which follow the independent pattern explained in the preceding chapter, gold and Federal Reserve Bank credit are the two principal sources of member-bank reserves, which in turn are the basis of member-bank credit and of the total money supply. It is for this reason that large gold imports make it more difficult for the Federal Reserve

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to regulate the supply of money. When member banks receive reserves through gold imports they can expand their loans and investments and thus increase the money supply without being obliged to apply for accommodation to the Federal Reserve Banks. Furthermore, they can increase it by several times the amount of the addition to their reserves through gold imports, just as they can on the basis of any other growth in reserves. At times the Federal Reserve has been able to offset the effects of gold imports by equivalent sales of securities in the open market, and at other times by raising member-bank reserve requirements. But there have been times when the Federal Reserve has lacked the means of offsetting the effects of gold imports. At such times its ability to influence the volume of money in the domestic economy is restricted by gold imports. The maintenance of international financial stability, under which gold movements usually remain moderate in amount, is consequently of great importance to the effective execution of central-banking functions.

A NOTE ON THE COMMITTEE FOR ECONOMIC DEVELOPMENT AND ITS RESEARCH PROGRAM

THE Committee for Economic Development was organized in August, 1942, by a group of business leaders who were convinced that attainment and maintenance of high employment after the war could not and need not be left to chance. They foresaw an opportunity to achieve unprecedented peacetime prosperity if business were ready to swing rapidly to peacetime production at the war's end and the government were prepared with policies and measures that would assist the reconversion and contribute to subsequent high production.

Recognizing that this undertaking comprised two distinct though related sets of problems, the CED provided for two areas of action: (1) a Field Development Division to supply to businesses, large and small, in every part of the land, information and aid in planning for peacetime production and employment; (2) a Research Division to study the economic problems of the immediate postwar transition years as well as the basic long-range problems in maintaining high production and employment.

It was generally agreed in informed quarters that high-level employment at the close of the war would require civilian jobs for 7 to 10 million more workers than had been employed in 1940. This meant that business had to plan a postwar volume of business greater than any prior peacetime year—in fact, an over-all increase some 30 to 45 per cent above 1940.

Through the Field Development Division, nearly 3,000

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county and community committees were established. More than 65,000 businessmen served as members of these committees, responsible for getting information concerning postwar markets and job requirements to the local manufacturer, merchant, and other businesses, and responsible, likewise, for prodding the individual businessman, hard driven though he was with war work, to lay plans for peacetime.

Tested procedures for making both production and employment plans were made available by the national CED office. Specialists in industrial management, in product design, in advertising and selling, and in training of sales personnel placed their skills at the service of all cooperating businessmen, without cost, through handbooks, films, training courses, business clinics, and forums for the local committees. An outstanding achievement of the Field Development Division was a postwar market analysis, carried out with the cooperation of leading industrial firms and trade associations, covering more than 500 finished-goods products. The findings of this two-year study were given to business and the public in a report, *American Industry Looks Ahead*, issued in August, 1945.

How thoroughly and carefully the local work was done was evident when, at V-J Day, the CED was the only major organization to state that, contrary to prevailing opinion, there would not be a job slump immediately following the war. Its reports from business throughout the country indicated preparedness to move rapidly into peacetime production. Its wartime "plan jobs" assignment concluded, the Field Development Division was discontinued early in 1946.

Plans for high-level production and employment will not flourish long unless national policies prevail that make such plans feasible. To define what these national policies of government, business, and labor should be to encourage high

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production and employment is the special task of the CED Research Division. This is the purpose of the research studies, of which this volume is the fifteenth.

To the long-range economic questions involved in this undertaking were added the particular economic problems arising out of the war. Six studies addressed primarily to the economic problems of the transition from a war to a peace economy were completed during the war years. Of the studies concerned with the longer range fundamental problems involved in the maintenance of high productive employment, eight have been issued. The present report on monetary management is the ninth of the long-range studies.

The authors of these reports had already won distinction in their own fields. Perhaps more important is the fact that they had demonstrated not only the competence but also the vigor of thought which these complex problems demand. Knowing, however, that the problems that would be scrutinized—taxation, monetary policy, international trade, agriculture, and the like—are not separate ones, but are integrated and must be studied in relationship one to the other, the CED has sought to make possible an exchange of information and views by the experts and, equally important, between the scholars and businessmen.

What may be a unique scheme of conferences was established, the objective being to blend the practical experience and judgment of the business world with the scholars' knowledge of the action of economic forces. A Research and Policy Committee consisting of representative successful businessmen was set up; to this group was added a Research Advisory Board whose members are recognized as among our leading social scientists; and finally, the persons who would be responsible for the individual reports were named, to comprise the Research Staff.

The subject matter of each report is threshed out by the members of these three groups, meeting together. The author of the report therefore has the benefit of criticism and suggestion by many other competent minds. He is able to follow closely the development of the reports on other economic matters that affect his own study.

No effort is made to arrive at absolute agreement. There is no single answer to the problems that are being studied. What is gained is agreement as to the determinative factors in each problem, and the possible results to be achieved by differing methods of handling the problem. The author of the report has full responsibility and complete freedom for proposing whatever action or solution seems advisable to him. There is only one rule—the approach must be from the standpoint of the general welfare and not from that of any special economic or political group; the objective must be high production and high employment in a democratic society.

The author is free to present his own conclusions and does not speak for the Research and Policy Committee or for the Research Advisory Board. In turn, the Research and Policy Committee usually prepares its own statement of national policy. This may endorse all of the recommendations arrived at by the author, or it may disagree with some of them.

Implicit in the organization and support of the CED by business is the belief that leaders in each major group in our society will in future need to make every effort to appraise the policies and activities of that group as they relate to over-all national objectives and well-being. In the CED research program, a mechanism has been devised to permit responsible study by businessmen of business problems and to allow responsible proposals to be offered for national policies affecting business and the economy. After six years of work, the merit of which has been recognized by educators, government of-

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ficials, labor leaders, economists and other social scientists, it does not seem too much to say that in the CED structure, business has devised a useful tool for democracy.

The following is a description of the research studies published or under way, with the transition-period studies shown first:

A. The Transition from War to Peace:

1. *The Liquidation of War Production*, by A. D. H. Kaplan, The Brookings Institution (already published). The problems involved in the cancellation of war contracts and the disposal of government-owned surplus supplies, plants, and capital equipment are analyzed quantitatively as well as qualitatively. How much war plant did the government finance, and what part of it could be put into civilian production? What criteria should prevail in selecting the producers to be released first from war manufactures as the war production program is curtailed? How and when should surplus goods be sold? Rapid resumption of peacetime production, with conditions favorable to high levels of employment, is the gauge by which the recommendations are measured.
2. *Demobilization of Wartime Economic Controls*, by John Maurice Clark, Professor of Economics, Columbia University (already published). When and how should the wartime controls be removed? The interdependency of the wartime controls of production, man power, prices, wages, rationing, credit policies, and others is made clear. How relaxation of each control may affect the peacetime economy—in terms of demand and supply, and therefore in terms of jobs and production levels—is weighed. The con-

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ditions that can be expected to prevail at different stages of the transition from a wartime to a peacetime economy are outlined, with emphasis on the variables with which we must be prepared to deal. Professor Clark does not overlook the significance of attitudes and objectives.

3. *Providing for Unemployed Workers in the Transition*, by Richard A. Lester, Professor of Economics, Princeton University (already published). An estimate of the size and the duration of transition unemployment. The efficacy of public-works employment, relief employment, the adequacy of unemployment compensation, wartime savings, dismissal pay, and the like are appraised. A program is developed to provide for the maintenance of workers who may be out of jobs in the transition from war to peace.
4. *Financing Business during the Transition*, by Charles C. Abbott, Associate Professor of Business Economics, Harvard University (already published). The sources upon which business has relied for its capital are examined, along with the current financial condition of large and small corporations. These two are balanced against the likely needs of financing by industry for reconversion and expansion in the transition years following the war.
5. *Jobs and Markets*, by Melvin G. de Chazeau, Albert G. Hart, Gardiner C. Means, Howard B. Myers, Herbert Stein, and Theodore O. Yntema (already published). The problem of controlling aggregate demand in the several transition years during which the nation will endeavor to move from the high plateau of wartime production and employment to a similarly high level of peacetime productivity. The deflation-

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ary elements as well as the current dangerous inflationary forces are examined. A program of fiscal, monetary, and price-control policies is presented to speed civilian production and to prevent inflation and depression in the return to free markets.

B. The Longer-term Fundamental Problems:

1. *Production, Jobs and Taxes*, by Harold M. Groves, Professor of Economics, University of Wisconsin (already published). A study of the Federal tax structure as it affects the creation of jobs. A second volume, *Postwar Taxation and Economic Progress* (already published), concludes Professor Groves' analysis of the relationship of taxation to economic development and presents an approach to taxation that would make for constructive tax policy. The second report inquires into the problems of state and local, as well as Federal, taxation.
2. *Agriculture in an Unstable Economy*, by Theodore W. Schultz, Professor of Agricultural Economics, The University of Chicago (already published). An investigation going to the roots of the "farm problem." The significance of excess labor resources on farms, the failure of price mechanisms to induce shifts of resources out of agriculture, the differences between the farm and industrial sectors in responding to reduced demand. The importance to farmers of continued prosperity in business. A solution to the farm problem without resort to price floors or restrictions on output.
3. *International Trade and Domestic Employment*, by Calvin B. Hoover, Dean of the Graduate School of Arts and Sciences, Duke University (already pub-

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